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Agricultural  
limestone  
issue

**A special report:**

# PUBLIC RELATIONS

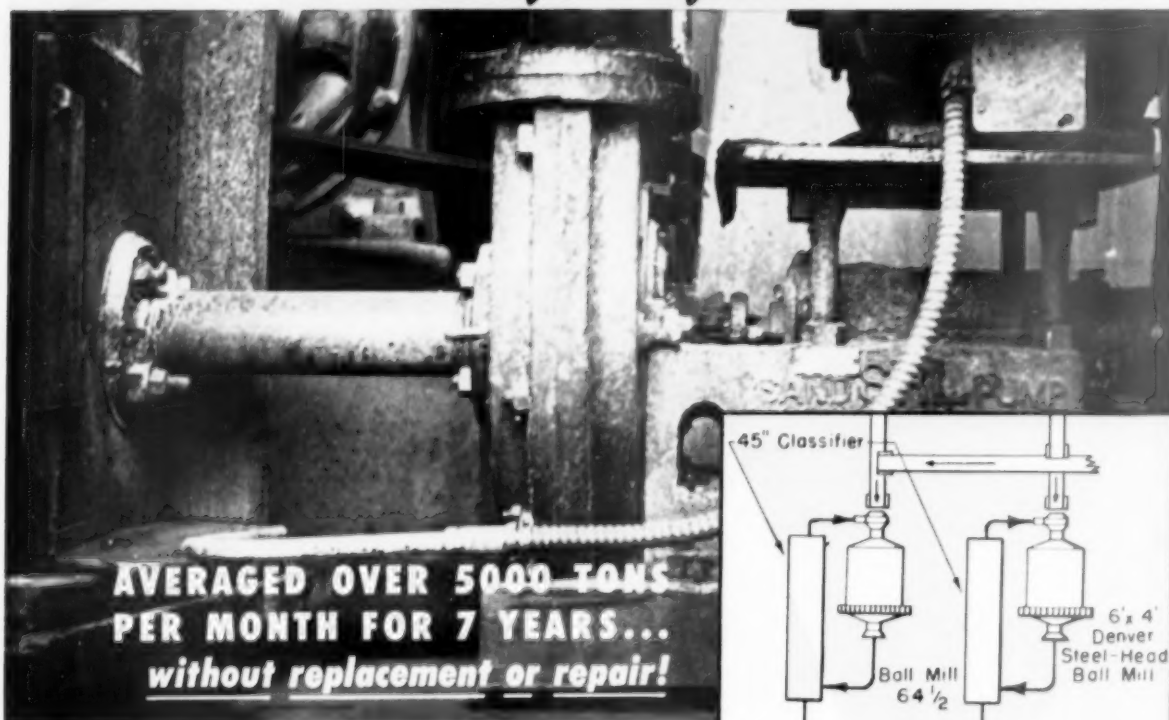
**A workable program for developing  
good community atmosphere**

See page 88

**APRIL 1957**

# DENVER SRL PUMP

*on classifier overflow...*



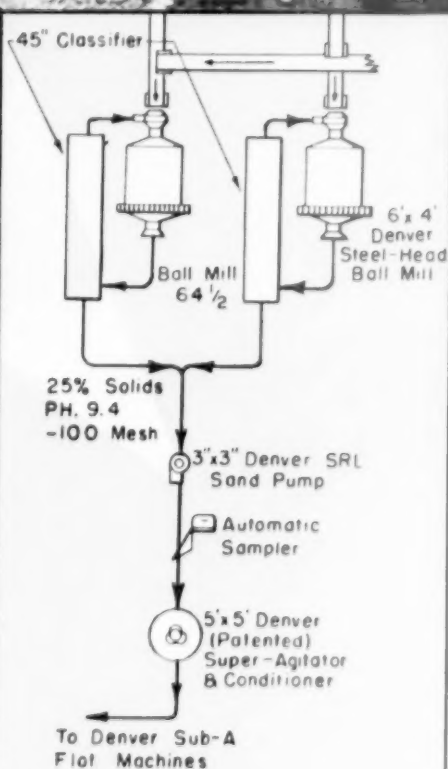
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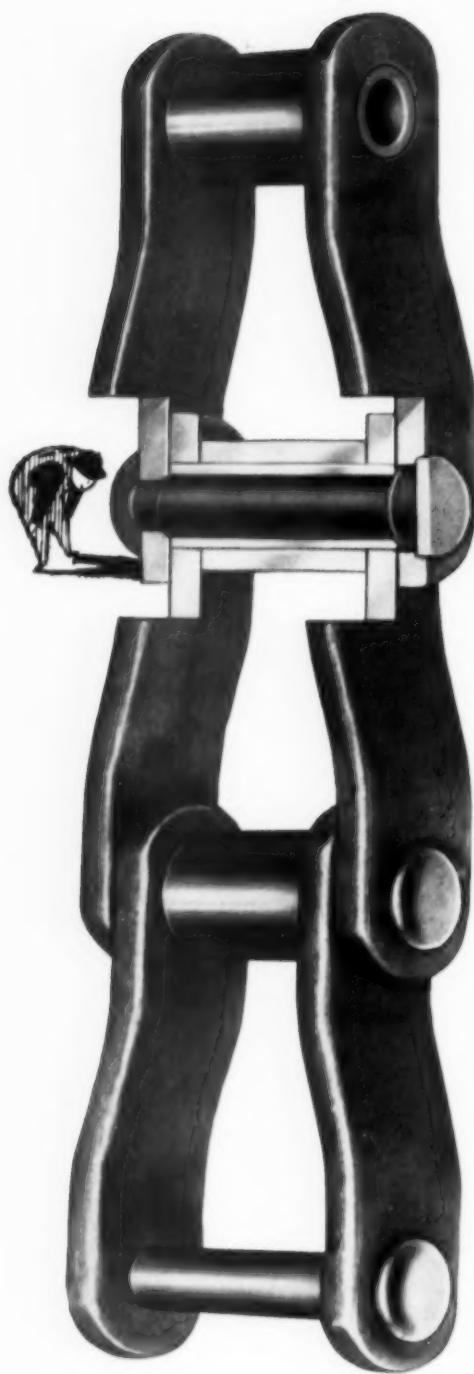
**Savings:** The B.F. Goodrich Nyfil belt shown here carries 700 tons of rock an hour. After 18 months of use it shows no sign of wear and is still going strong.

**Extra benefits:** High-tension Nyfil fabrics make it possible to engineer longer center and high lift conveyors in a single flight. This means lower installation costs, lower power costs, higher operating efficiency and lower maintenance costs.

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## DON'T MISS . . .

### Agricultural limestone—

With each April issue we turn the spotlight on agricultural limestone. Here are the features you won't want to miss: Conservation programs—how they are viewed by agronomists, Soil bank program, Ag-lime: Why isn't more of it used. There's also an article on a unique guide that helps sell lime to farmers. See contents for the page numbers of these features.

### Drilling—

Vacuum drilling may replace the jackhammer in some drilling operations. Read about one company's experimental trial of this new type of equipment. See page 100

### Concrete block—

Several months ago a group of architects, builders and designers flew down to Phoenix, Ariz. on an unusual business trip. They were taken there by a concrete block manufacturer for the sole purpose of seeing for themselves what can be done with concrete block. For the story and result of this unique form of promotion, see page 232

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APRIL 1957

# PRODUCTS

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ROCK PRODUCTS is published monthly by MACLEAN-HUNTER Publishing Corporation, 29 W. Monroe St., Chicago 3, Illinois. P. D. Allen, President; Copyright, 1957, by Maclean-Hunter Publishing Corporation. Entered as second-class matter, Jan. 30, 1936, at the Chicago, Ill., post office under the act of Mar. 3, 1879. Additional entry at Long Prairie, Minn.

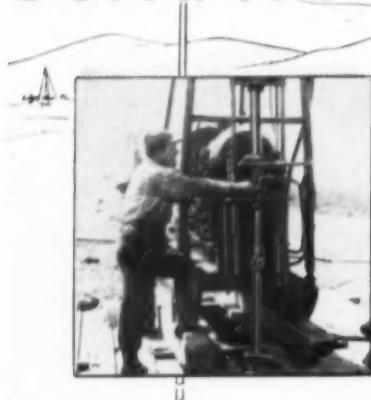
SUBSCRIPTION INFORMATION  
Subscription Price: United States and Possessions, Canada one year, \$3.00; two years, \$4.00; three years, \$5.00. U.S. single copies, fifty cents. Pan American,

one year, \$8.00; two years, \$14.00; three years, \$20.00. All other foreign one year, \$12.00; two years, \$22.00; three years, \$30.00. One dollar for single copies. Canadian subscriptions and remittance may be sent in Canadian funds to ROCK PRODUCTS P.O. Box 100, Terminal "A," Toronto, Canada.

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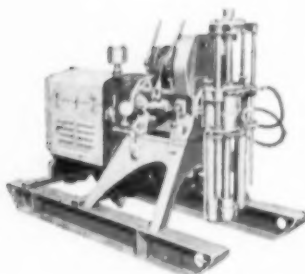
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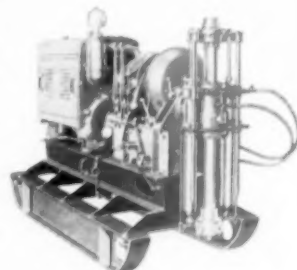


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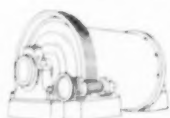
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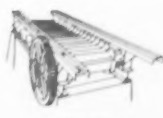
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ROCK PRODUCTS, April, 1957

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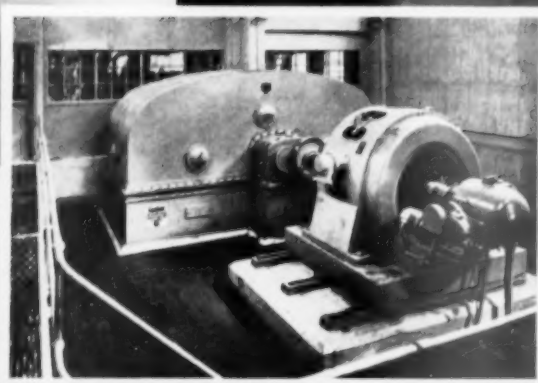
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# What's Happening

---

IN OTHER FIELDS OF INTEREST TO THE ROCK PRODUCTS INDUSTRY

April, 1957

**A member of the General Electric research team** which produced man-made diamonds two years ago, Dr. Robert H. Wentorf, has made another discovery. The material is a boron-nitrogen compound called "borazon" and is said to have the hardness of a diamond and more heat resistance. Dr. C. Guy Suits, GE vice-president, thinks its ability to withstand temperatures of 3500 deg. F. "will make possible better methods of mounting stones in industrial tools and may also allow bits and wheels to be operated at higher speeds, performing their cutting and polishing jobs more quickly and efficiently."

**An atom-bombproof garage** which can hold 550 automobiles in peacetime or shelter 20,000 persons in case of war has been blasted into the Katarina promontory south of Stockholm, Sweden. A 70 ft. thick shelf of solid rock covers the three-story garage. To prevent the penetration of detonation waves, corridors and passages have been built at a 90-deg. angle, as have the funnels and ventilator channels. Fifty air purifiers, a power station, and an ice-producing unit for air conditioning are included in the equipment. The structure took four years to complete, at a cost of about \$4 million.

**An inflatable and portable plastic house** has been designed by Frank Lloyd Wright, and will be shown at the Showcase for Better Living home exposition in New York in May. The "air house" is hemispherical in shape, measuring 25 x 46 ft. It is made of Fiberthin, vinyl-coated nylon fabric manufactured by the United States Rubber Co. Ground anchorage is provided by 15-in. dia. Fiberthin tubes extending around the base. The tubes are filled with 1,750 lb. of sand. Deflated, the house weighs 200 lb. and folds into a 3- x 3-ft. package.

**A ceramic magnet, "Indox V,"** has been developed by Indiana Steel Products Co., Valparaiso, Ind. Robert F. Smith, president, said the new material offers substantial savings in magnetic materials and space, and is lighter in weight than metallic magnet materials. He said it also is suited to medium-size direct current motors, radio components and other devices where size is a factor.

**The chemical industry will spend** an estimated \$2.5 billion on new domestic chemical construction through 1957 and 1958, according to results of a survey conducted by Manufacturing Chemists' Association, Inc. The 278 projects now under construction will cost an estimated \$1.8 billion, and another 128 projects are definitely planned at an estimated cost of \$717 million.

**For fighting underground fires,** a method has been developed by West German mining engineers. A high-speed machine, mixing water with 300 bags of cement per hour, sprays the mixture to seal in an outbreak. An air compressor furnishes the power for the operation, which is said to be six times as fast as manual procedures previously used.

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## WHAT'S HAPPENING

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**A major disposal problem** for which the Atomic Energy Commission is seeking a solution is how to get rid of dangerous nuclear wastes, reports the **Wall Street Journal**. As more atomic furnaces and power reactors come into use, the problem will become more pronounced. Research is currently proceeding on pumping less dangerous liquid wastes into abandoned oil wells, underground salt domes or other basins 5000 to 15,000 ft. below the surface. A method in pilot-plant use at Brookhaven National Laboratory locks the most dangerous waste into the clay, montmorillonite. This involves shaping the clay into strings which absorb the radioactive materials, baking it hard to seal in the radioactivity, and burying it in underground caves. An idea being studied at Johns Hopkins University is that of fixing dangerous wastes in hard, synthetic crystal-like minerals for burial. The ocean as a possible dumping place has been discussed but, says the National Academy of Sciences, more data must be acquired about deep water ocean movements before this can be considered.

**Engineering demands of the Federal Aid highway program** will provide a major impetus to the development of photogrammetry, the applied science of using photographs for making physical measurements. This was the prediction of Professor Charles L. Miller, Massachusetts Institute of Technology, at the national convention of the American Society of Civil Engineers. He estimated that highway departments may spend \$200 million in the next decade for photogrammetric services. This justifies, urged the speaker, a collective expenditure of \$1 million a year during those years to sponsor photogrammetric research in the engineering schools.

**A 2-in. blanket of cork** was laid over the concrete ceiling of a department store basement in Denver, Colo., to keep out traffic noises of the street directly overhead. Five layers of waterproofing were placed on the cork before a 10-in. concrete slab was poured to form the street's foundation, finished with a 2-in. asphalt surface.

**Bentonite found in eastern Washington** can be used for sealing purposes in dams, reservoirs and irrigation canals, according to a report by the Seattle experiment station of the U. S. Bureau of Mines. Found near Yakima, the bentonite is more impervious to water than a Wyoming bentonite widely used, the station reports.

**Heavy construction awards**, nationally, totaled \$2,778.5 million for the first eight weeks of 1957, as reported in **Engineering News-Record**. This was a decrease of 18 percent below the record volume set in the same period of 1956, when contracts were running 45 percent above 1955.

**Deliveries of new freight cars** to the railroads in 1956 totaled 67,080, compared with 36,896 in 1955. The backlogs of cars on order and undelivered totaled 117,257 on January 1, 1957.

**A new record chalked up in 1956** by the Great Lakes fleet has been reported by the Lake Carriers Association: 30,753,412 net tons of limestone traveled the Great Lakes.

THE EDITORS



## A new bulk-packed blasting agent with high velocity...for medium to fairly hard shooting **Du Pont "Nitramite"® F.R.**

Here's a new blasting agent, ideal for coyote shooting or for pouring in drill holes of 3" diameter or over. Du Pont "Nitramite" F.R. has all the safety features of other blasting agents plus a much higher order of performance than other ammonium nitrate products.

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The first lining in this mill was made of 2" liner plates and lift bars, Section M-3714, designed to permit replacement of bars during life of the lining. In grinding the 38 million barrels of clinker, one lining and one set of renewal bars were completely worn out. But despite the tremendous tonnage processed, the second lining installed was still in serviceable condition when the mill went down for general repairs in February.

**HEAVIER-DUTY LINING**—The performance of the original Lorain linings was so impressive that management at Universal Atlas decided to install the latest type Lorain lining with deep recessed liner plates and extra-heavy lift bars, Section M-4497, to further increase the mill's grinding efficiency and to eliminate the need for replacing lift bars. The new type lining was installed during the repair period in February so production would not be interrupted during the peak season this summer. Frankly, no shutdown due to lining problems

is expected for the next several years.

**LONGER LIFE . . . CONSTANT LIFT**—USS Lorain Rolled Plate Linings are made of tough, rolled steel that means longer grinding life. Lift bars are rolled alloy steel, heat treated to obtain a hardness differential that will maintain lift height throughout life of the lining, thus providing maximum grinding efficiency. Each Lorain Lining is tailor-made to fit a particular mill. The linings fit snugly—shell wash is eliminated. Mr. A. E. Glasspool, Maintenance Supervisor at Hudson, said "Lorain Linings are designed right and they fit tight. Each piece was properly marked, so we had no trouble with installation."

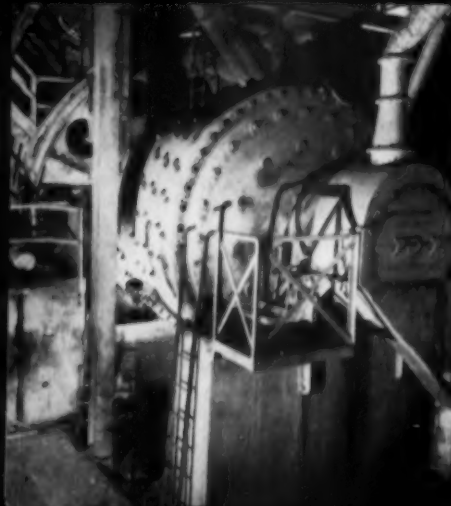
These heavy-duty linings installed by Universal Atlas will provide effective grinding action without fear of broken bolts, cracked plates or bars, and will continue to perform efficiently until the plates wear paper-thin.

**WE'RE GLAD TO HELP**—If you are not aware of the merits of USS Lorain Rolled Plate Linings and are not using them—if you are experiencing lining difficulties of any nature, we will be glad to have a sales representative call on you. Just write to: United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

This 10'-6" x 12' Preliminary mill in Universal Atlas Cement's Hudson, New York, plant has ground 37,873,000 bbls. of clinker at a rate of 360 bbls. per hour.

The specially designed bolts will hold the Lorain Lining snug and tight for the life of the lining without fear of breaking. Lorain Linings are made of tough, rolled steel that is tailor-made to accurate shapes.

Although there was still some life left in the old lining, management decided to install the heaviest-duty Lorain Rolled Plate Lining for even greater grinding efficiency, and to assure continuous operation for several years to come.





These new, heavy-duty lift bars, Section M-4497, and 2-inch-thick liner plates are expected to increase mill efficiency. This lining will retain lift for millions of tons. USS Lorain Rolled Plate Lining successfully grinds until plates are worn paper-thin. USS Lorain-designed special man-holes and covers were also an unusual feature of this installation.

UNITED STATES STEEL CORPORATION, PITTSBURGH • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.,  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

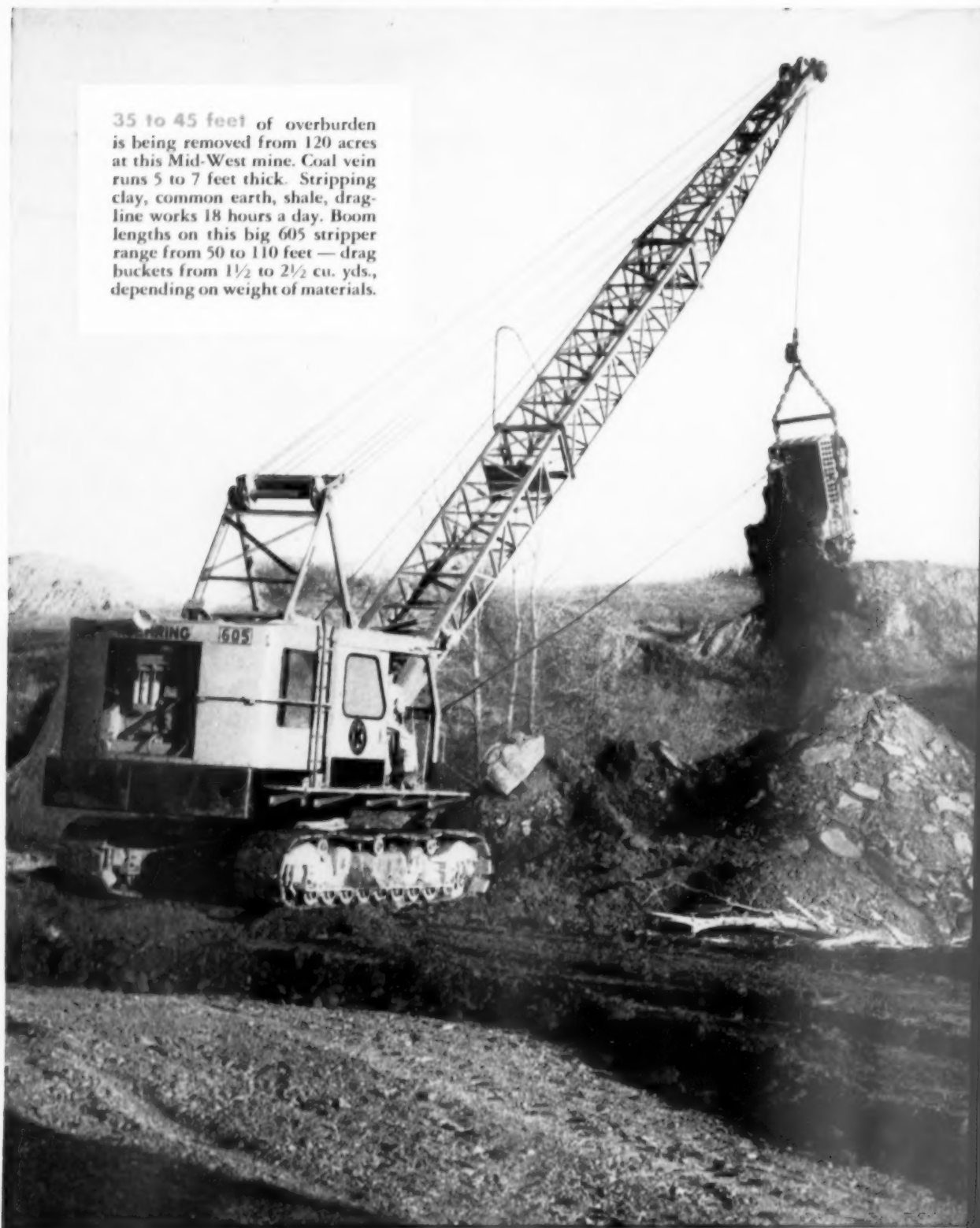
## USS LORAIN ROLLED PLATE LININGS and USS GRINDING BALLS

UNITED STATES STEEL



## KOEHRING WORK CAPACITY *in action . . .*

35 to 45 feet of overburden is being removed from 120 acres at this Mid-West mine. Coal vein runs 5 to 7 feet thick. Stripping clay, common earth, shale, drag-line works 18 hours a day. Boom lengths on this big 605 stripper range from 50 to 110 feet — drag buckets from 1½ to 2½ cu. yds., depending on weight of materials.



**KOEHRING COMPANY** Milwaukee 16, Wis.

Subsidiaries: JOHNSON  
PARSONS • KWIK-MIX



**Pan-handler** — In an Eastern quarry, slabs of sandstone are palletized on pans for quick pick-up, and loaded on trucks. Pans weigh an average of  $3\frac{1}{2}$  tons — an easy lift for the Koehring 205 truck crane. Constantly moving to various piles around the quarry, it easily loads 24 pans an hour, according to quarry foreman. With this mobile 205 crane they are equipped to handle loads up to 15 tons.

◆ **Meet the 405** — new heavy-duty leader in the 1-yard class. Operators like its ease of control, big power clutch, automatic traction brakes, and simple 2-shaft design of upper machinery. You'll like its big work capacity with all attachments: 1-yard shovel or hoe, 1 to  $1\frac{1}{2}$ -yard clam or dragline, 20-ton crane.



Here are some figures that will interest you:



◆ **At rail siding**, 305 clamshell crane speeds transfer of material from gondola cars to trucks. Its fast swing and wide work radius pay off on any material-handling. This heavy-duty 305 is another in a modern, new series of Koehring extra-capacity excavators and cranes. Look them over. They're all listed in accompanying chart.

KOEHRING MODEL	SIZE DIPPER	LIFT CAPACITIES <small>(Crawler ratings based on 75% of tipping load. Rubber tired machines — 85% of tipping load.)</small>	
205 CRAWLER	$\frac{1}{2}$ -Yd.	20,000 lbs.	at 10-foot radius
205 ON RUBBER	$\frac{1}{2}$ -Yd.	30,000 lbs. 13,700 lbs.	at 12 foot radius at 20 foot radius
305 CRAWLER	$\frac{3}{4}$ -Yd.	30,000 lbs.	at 12-foot radius
305 ON RUBBER	$\frac{3}{4}$ -Yd.	50,000 lbs. 15,800 lbs.	at 10 foot radius at 30 foot radius
405 CRAWLER	1-Yd.	40,000 lbs.	at 12-foot radius
605 CRAWLER	$1\frac{1}{2}$ -Yds.	72,300 lbs.	at 12 foot radius
1205 CRAWLER	3-Yds.	190,000 lbs.	at 13-foot radius



Want more information? Call Koehring distributor today.

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# USERS SAY



# BELTS AND HOSE GIVE YOU

## RAY-MAN CONVEYOR BELT...

### Outlasts Them All on Tough Hauls!

R/M engineering makes the difference with this heavy duty conveyor belt. Ray-Man Conveyor Belt features a new construction of covers and strength members to resist cuts, tears and abrasion to a degree never before possible. R/M's exclusive "XDC" Cover adds an extra measure of protection and long life not available with any other belt. And beneath the cover, cushioned strength member plies, in an envelope of strong, flexible synthetic fabric, resist the impact of heavy, shock loading and ripping. The belt troughs easily and trains naturally.

Ray-Man Conveyor Belt holds fasteners better than ordinary belts . . . requires no breaker strip. Like all R/M heavy duty belts, it's moisture resistant and mildew-proof. You get longer, trouble-free service . . . "More Use per Dollar" with Ray-Man as well as other R/M conveyor belt constructions, including extra-cushioned Homo cord for unusually abusive shock loading, and R/M Tension-Master for extra long lifts, high tensions.

Write for Bulletins #6915 and #6906




● TRAINS  
NATURALLY



● DOUBLE COMPENSATION  
RELIEVES OUTER PLY STRESSES



● RESISTS  
IMPACT



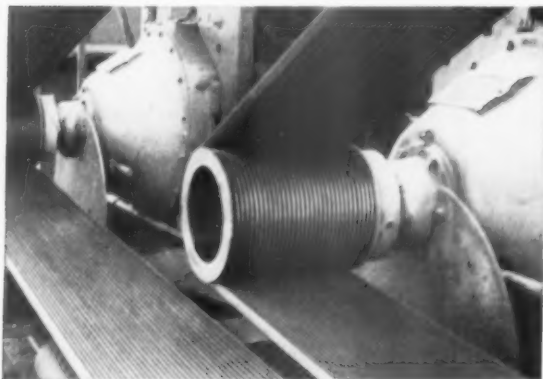
**"More Use per Dollar"**

## **HOMOFLEX HOSE is Easier Handling... Longer Lasting!**

The unique construction of Homoflex Hose makes it light, yet strong . . . and flexible as a rope. Made with no pre-set twist, it coils and uncoils in *any* direction *without* kinking. A homogeneous cover, strength member and tube that are virtually inseparable assure easier, safer handling on the toughest jobs. It's easier to

couple, too, because it has uniform inside and outside diameters. Homoflex Hose gets more work done, lasts longer . . . gives you "More Use per Dollar" . . . wherever air, water, and other fluids and gases are handled.

Write for Bulletin # 6879



## **R/M POLY-V<sup>®</sup> DRIVE**

### **Delivers More Power in Less Space!**

Single unit belt design of R/M's patented Poly-V\* Drive permits *narrower* sheaves to deliver up to 50% *more* power in the *same* space as ordinary V-belt drives . . . *equal* power in as little as 2/3 the space! Poly-V eliminates multiple belt matching problems, too . . . and just *two* belt cross sections meet *every* heavy-duty power requirement.

Write for Bulletin # 6638

For the "Smoothest Running V-BELTS Made,"  
Specify **CONDOR** and **R/M SUPER-POWER V-BELTS**

\*Poly-V is a registered Raybestos-Manhattan trademark.

**BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES**

**MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY**  
**RAYBESTOS - MANHATTAN, INC.**

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## EATON 2-SPEED AXLES

### Keep Trucks Out of the Shop!

Whenever you cut down on wear and tear—keep trucks on the job, out of the shop—you're adding to profits three ways: 1—By keeping trucks earning, not costing. 2—By saving the expense involved in interrupted service and delayed trips. 3—By cutting actual parts-and-labor maintenance costs.

That's exactly what Eaton 2-Speed Axles do. By furnishing the *right* gear ratio for every operating condition, they reduce stress and wear on engines and all power transmitting parts. In addition, Eaton 2-Speed Axle trucks last longer, haul more at lower cost, and are worth more on the trade-in.

It all adds up to this: when you specify Eaton 2-Speed Axles, you're swapping expenses for profits!



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Eaton Axles in Trucks Today.  
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see your truck dealer.

# EATON

AXLE DIVISION  
MANUFACTURING COMPANY  
CLEVELAND, OHIO



**PRODUCTS:** Engine Valves, Tappets, Hydraulic Valve Lifters, Valve Seat Inserts, Jet Engine Parts, Hydraulic Pumps, Motor Truck Axles, Permanent Mold Gray Iron Castings, Forgings, Heater-Defroster Units, Automotive Air Conditioning Fastening Devices, Cold Drawn Steel, Stampings, Gears, Leaf and Coil Springs, Dynamatic Drives, Brakes, Dynamometers

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## EDITOR'S PAGE

### Can You Sell Agricultural Limestone?

**A**GRICULTURAL LIMESTONE PRODUCERS are faced with a real challenge. They have a wide-open opportunity in the future to market their product to farmers without assistance under federal conservation programs. In fact, government assistance programs can't possibly supply the money for the liming materials needed to bring U. S. croplands to required production efficiency.

The point was made by Senator Karl E. Mundt during his address to the N.A.L.I. annual banquet in Washington this past January. What he had to say was worth listening to.

If we understand his figures correctly, here's what he said: There were 455 million acres of croplands in the U. S. in 1950. Of the total, about 45 million acres were considered Class I lands, 325 million were lands that could be used "with moderate to severe limitations or risk of erosion." Another 45 million acres could be used with only severe limitations, and about 40 million acres were not suited for use.

Thus, at least 370 million acres—in 1950—were in need of conservation practices (use of liming materials) to assure that our future citizens will be fed adequately.

Now, about five million acres are being served with limestone, with government assistance, at an average cost for the material of \$4 per acre. Total cost for limestone is only about one-fifth the cost of the assistance program.

Consider the effect, moneywise, if the whole job were to be done by government assistance! Over a 10-yr. period, 37 million acres should be treated per year at a cost of \$150 million per year, for limestone only. That means an annual assistance program of \$750 million—three times what it is now for A.C.P.

Government just can't do the whole job! It can assist, and the original program was designed to do just that. Right now, limestone use by farmers shows a 3-4 to 1 ratio in favor of an assistance program over non-assist purchases. The program, then, is not an assistance program—it is the backbone of agricultural limestone sales.

Even though farmer income is relatively low now, isn't it wise for him to invest his dollar in a deal that will return 15-20 to 1? On that basis, maybe he can pick himself up by his own bootstraps. Besides, wise conservationists say he has to use more limestone.

The opportunity is there for limestone producers if they'll use every avenue of education and promotion to persuade farmers to buy their own limestone—so says Senator Mundt.

*George C. Lindsey*

**RESEARCH-COTTRELL'S**

**New C A System**

*brings*

**Auto**

**to precipitators**

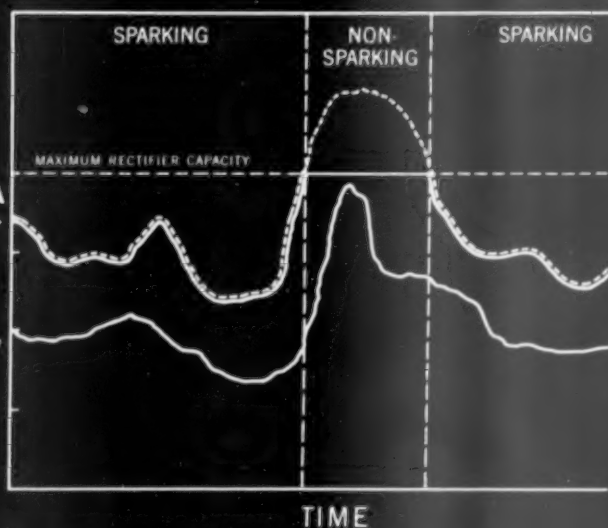
Higher "around-the-clock"  
collection efficiency  
without any manual  
adjustments. That sums up  
the major advantages of  
Research's new Cottrell  
Automation System.

IDEAL  
POWER

CA  
SYSTEM

MANUAL  
CONTROL

POWER INPUT COMPARISON



*The  
chart at the*

*left* shows how the CA System provides these advantages. As you know, ideal electrical power input to a precipitator is not constant. It varies with changes in gas composition, temperature, rate of flow and humidity, as well as characteristics of the dust, such as size, electrical resistivity and extent of build-up on the electrodes. With conventional controls, manual adjustments cannot keep pace with these changing conditions. This difference between *ideal* electrical power and *actual* power input, under manual control, is shown in the chart. This

# Automation

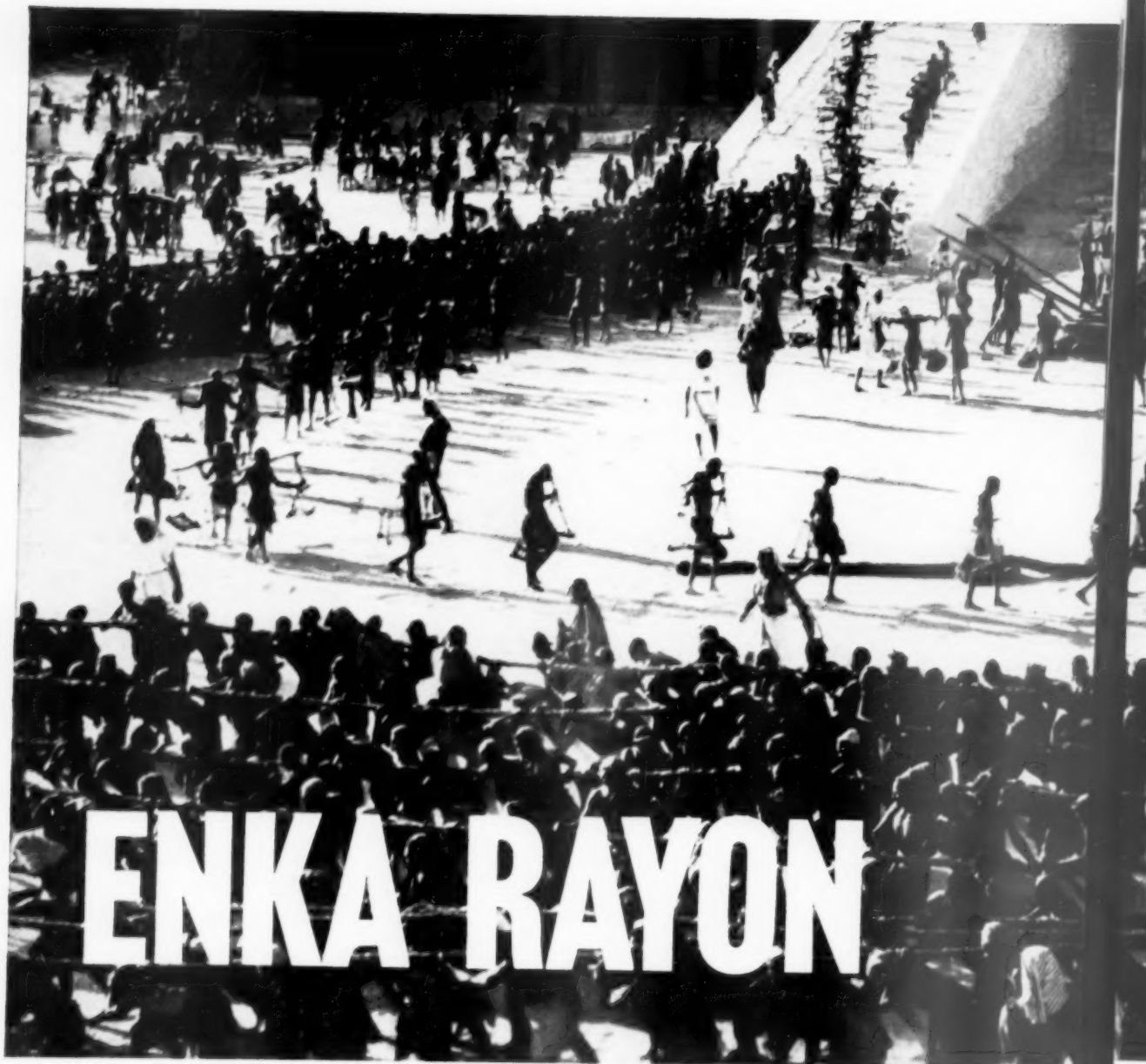
difference means lower collection efficiency.

The fast acting electronic circuits of the CA System provide the best practical approach to ideal electrical power. During periods of sparking, electrical power input is controlled by the optimum sparking rate, which can be easily pre-set to any value between 0 and 500 sparks per minute. Under some conditions power input would have to be increased beyond the capacity of the electrical equipment in order to maintain this optimum sparking rate. During such periods the power input is governed by the *capacity* of the electrical equipment. This condition is shown in the center vertical section of the chart.

For more information on this new automation development write for your copy of Bulletin CA. It has a detailed description of how the Cottrell Automation System works and how higher "around-the-clock" collection efficiencies and lower operating costs are obtained.

## Research-Cottrell

RESEARCH-COTTRELL, INC., Main Office and Plant: Bound Brook, New Jersey • 405 Lexington Ave., New York 17, N. Y.  
Grant Building, Pittsburgh 19, Penna. • 228 No. La Salle St., Chicago 1, Ill. • 58 Sutter Street, San Francisco 4, Cal.



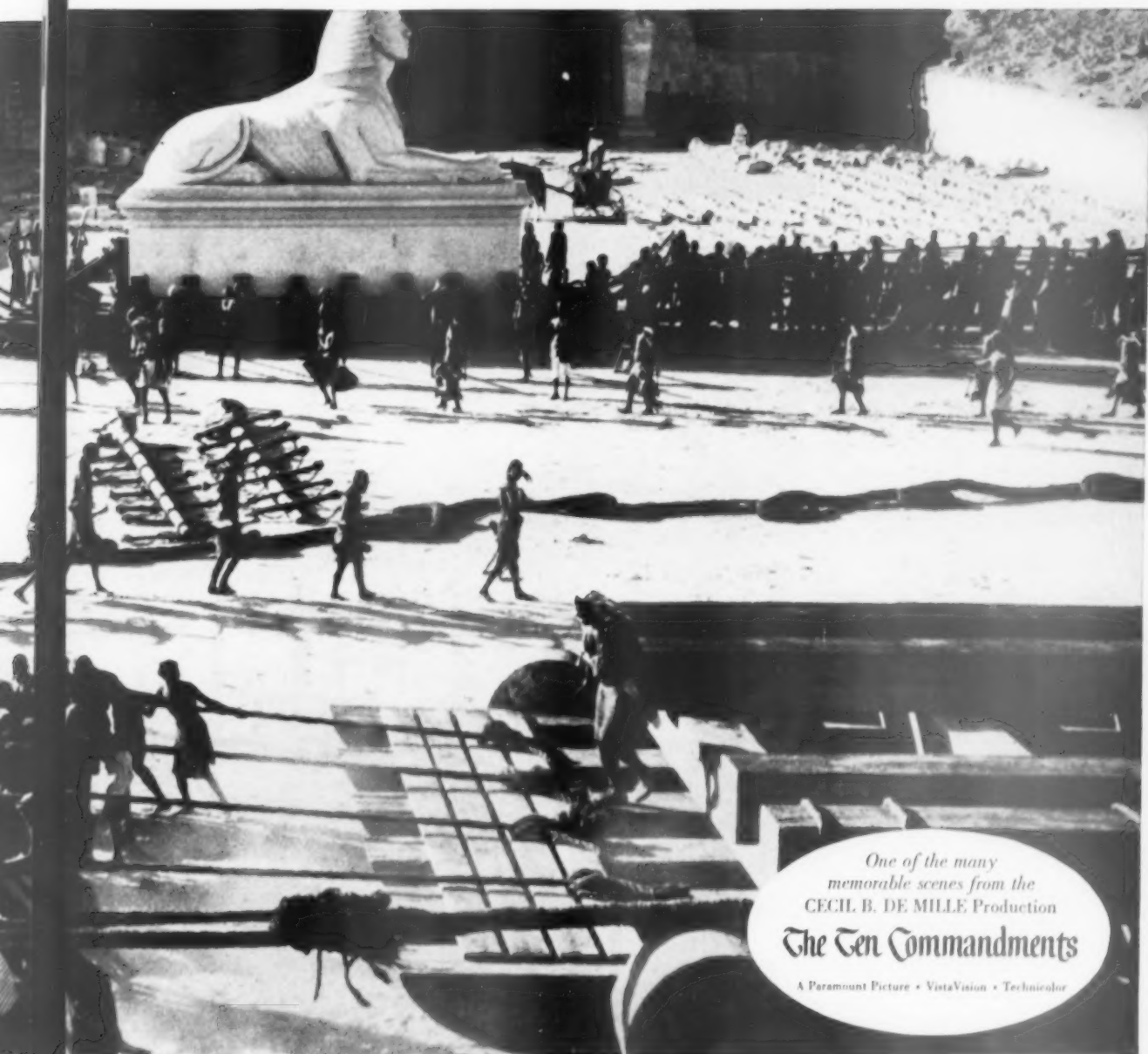
# ENKA RAYON

has what it takes to move a mountain th

## AMERICAN ENKA CORPORATION

producers of Jetspun® • filament and staple rayon • filament and staple nylon

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871 McCallie Avenue, Chattanooga, Tennessee • 2001 Industrial Bank Building, Providence, Rhode Island



One of the many  
memorable scenes from the  
CECIL B. DE MILLE Production

**The Ten Commandments**

A Paramount Picture • VistaVision • Technicolor

n the size of nine pyramids



Hewitt-Robins has specified Enka High Tenacity Rayon in their 1.8 mile conveyor belt system for Southern Pacific at the Great Salt Lake. Here, Enka Rayon is clearly demonstrating its outstanding advantages. At a record 8,800 ton-miles-per-hour, Enka Rayon provides durable strength with flexibility, exceptional resilience, tension and abrasion resistance.

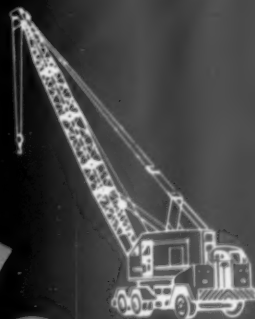
This means that by specifying Enka High Tenacity Rayon in your conveyor belts you get the above advantages and you get them at lower cost. Call or write for further information.

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ROCK PRODUCTS, April, 1957

25

FROM TIMKEN-DETROIT...

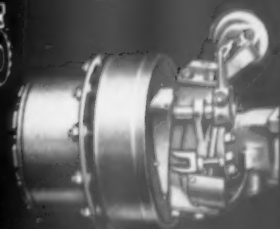


today's

**BROADEST RANGE**



**OF**



**PLANETARY AXLES**

**... both steering and rigid!**



# FOR HEAVY-DUTY SPECIAL EQUIPMENT AND TRUCK APPLICATION

The Timken-Detroit family of advanced design axles now includes a complete range of new planetary heavy-duty axles—with a steering axle operationally matched to each rigid axle in the line.

Versatility, ruggedness, and almost unlimited gear reductions make these new planetary axles the leaders in their line. They are going into use in practically every corner of the world on heavy-duty two- and four-wheel drive prime movers, husky off-road rock and earth wagons, big four-wheel tractors, mining equipment, heavy-duty scrapers, front-end loaders and many other units of heavy-duty equipment.

Years of TDA® research and development have brought these new and exclusive planetary outer-end features: floating ring gears—concentrically mounted ring gear hubs—full-flow lubrication of all bearings and planet gears—special forged bronze planet pinion pins—and an unusually high degree of parts interchangeability. For the newest and finest in planetary axles—depend on Timken!

## Only New Timken® Full Planetary Design Brings You These Features for Extra-Long Life, and Extra Dependability:

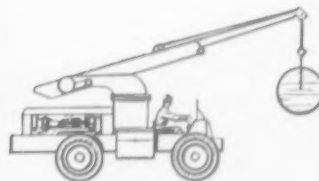
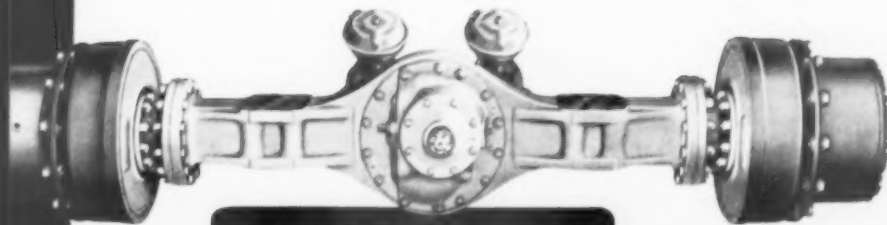
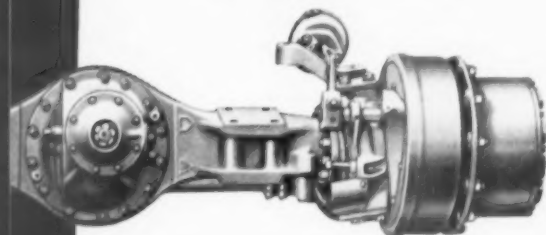
**1. NEW FLOATING RING GEAR** and hub are two separate pieces. Ring gear is free to float radially. This feature, combined with floating sun gear, assures equal distribution of stresses to all planetary gears, gives longer, trouble-free gear life.

**2. CONCENTRICALLY GROUND RING GEAR HUB AND SPINDLE MOUNTING SURFACES** ground around a common center assures perfect alignment and fit—plus freedom from bending forces on the hub and spindle splines. Splines absorb only torsional stresses from the ring gear and transmit them to the housing.

**3. SPECIAL FORGED BRONZE PLANET PINION PINS** of premium alloy bronze for longer, trouble-free operation. Rifle drilled lubrication channels and machined lubrication flats assure full time lubrication. When cover is assembled pin is locked in place to prevent rotation—resulting in longer pin life.

**4. FULL-FLOW LUBRICATION** design of Timken planetary axles assures constant flow of lubricants to wheel bearings and all planet gears while vehicle is in operation. Wheel hub and planetary spider pick up oil in the cast reservoirs as they rotate and channel it to all moving parts. When vehicle is not in motion oil is retained in these chambers providing ample initial lubrication.

**5. HIGH DEGREE OF PARTS INTERCHANGEABILITY** between both rigid and steering axles in the same series. This means a smaller parts inventory, low maintenance costs and more productive time with Timken planetary axle equipped vehicles.



Plants at: Detroit, Michigan • Oshkosh, Wisconsin  
Utica, New York • Ashland, Kenton and Newark, Ohio  
New Castle, Pennsylvania

**WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS**

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## INDUSTRIAL SCREENS

*for accurate, low-cost screening*

You can get a CF&I Industrial Screen that has exactly the right combination of features to assure fast, accurate, low-cost service in your screening operation. That's because CF&I Screens are available in standard and special weaves . . . and can be supplied in a wide variety of carbon and

alloy steels, as well as in non-ferrous metals.

It's extremely simple to get the complete story on how CF&I Industrial Screens can be used to improve your screening operation—just contact your nearby CF&I representative. No obligation on your part, of course.



## SPACE SCREENS

THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION: Albuquerque • Amarillo • Billings • Boise • Butte • Casper • Denver • El Paso • Ft. Worth • Houston  
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## The Changing World

SOME WISE MAN ONCE SAID that the common expression "Time passes on," or the more popularized one "Time marches on," is not a truism. The opposite is true, "Time stays, we pass on." When one has passed three score and ten, the truth of this becomes very evident. Our contemporaries are passing on rather rapidly, and the world, particularly the industrial world we were so long familiar with, shows changes, progress we hope, not so evident when they were actually occurring.

These thoughts come to mind from the recent deaths of three good friends who had much to do with progress in these rock products industries—Charles Warner, Russell Rarey and James Savage. They were distinctly different types, but each unforgettable to those of us who knew them at all intimately.

Charles Warner for many years had been the only surviving member of the group which organized the original National Lime Manufacturers' Association; that was in 1902, the same year ROCK PRODUCTS began publication. Charles Warner once told the writer that he sometimes marveled at this distinction, but on consideration it was not hard to account for, because he was at the time a mere youngster among a lot of old gray-beards. He was active in the Association until a few years ago and helped the industry over many hurdles. He was not only a successful businessman, but our ideal of a true industrial statesman. Charles Warner was several times president of the Association and its leader in writing its first Code of Ethics and later was chairman of the NRA Code Authority for the Lime Industry. He led in labor relations as well as in public relations.

Russell Rarey was the incisive type who forced himself to the top of the one corporation he worked for continuously, from clerk and time-

keeper to president, by sheer ability, industry and concentration. He always had his eye on the job ahead, and never hesitated to accept the boss's work and/or his responsibilities. Russ once told the writer that the then vice-president of the company, when Russ was merely his assistant, predicted Russ would one day be president. Apparently it was a goal he kept ever in mind. Perhaps because of this he expended all his vital energy sooner than some of his contemporaries and died before his time.

Russ came into the National Crushed Stone Association during a period when there was no question of the rule by our late friend, Otho M. Graves. With his incisive, and as appeared at the time, a rather pert mannerism, the two at the start did not like each other any too well. Otho once expressed the private opinion that Russ was too much the "smart Aleck." It is much to the credit of both men, and is proof of their calibre, that they almost at once sat down together, laid their cards on the table, ending with true understanding and appreciation of the abilities and talents of the other. They soon became the best of friends. Thus the way was opened for Russ to become president of the Association and one of its greatest assets in the years that followed. Russ also took a prominent part in rebuilding the National Lime Association, after his company entered the lime business.

James Savage lived longer than the rest of his contemporaries. For a number of years he and the writer were the only survivors of the group that met in Chicago in February 1918 to organize the National Crushed Stone Association. Jim was then and there elected a director, and was continuously a member of the board to the day of his death. For most of that time he was treasurer of the Association, and unofficial historian, since he always took his camera to local meetings and to summer directors' meetings; and thus he accumulated many hundreds of feet of film, which we trust will find their way into the archives of the Association.

*Please turn to page 176*

# "Comes out with a Heaped Load every time"



## **40° Break-out at Ground Level**

You can get *heaped bucket loads* and you get them *faster* and *easier* with this new bucket action. Most important of all—you *keep bigger payloads* because the bucket can be tipped back a full 40 degrees at ground level *before* it is raised with less spillage while digging and while carrying.

## **Tremendous Pry-out Action**

Tremendous pry-out force is obtained by using the breakout pads on the ground as a fulcrum for leverage. The load forces opposing the pry-out action are thus transferred to the ground through the pads instead of being concentrated on the front axles and wheels.

## **Power Transfer Differentials**

This exclusive "PAYLOADER" feature makes 4-wheel-drive traction even more reliable. The wheels with the best footing get the most power. You get traction and *action* instead of wheel-spinning inaction on sand, gravel and snow.

## **"No-Stop" Power-shift**

Instant finger-tip shifting—on the go. There's no stopping for a RANGE shift, no "clutching." Forward, reverse control can also be operated under full engine speed, in any gear . . . all this plus torque converter drive.

**Manchester Sand-Gravel and Cement Co., Inc. has been a "PAYLOADER" user for many years.** It now has 3 model HM's—the pioneer 4-wheel-drive tractor-shovels—and a big 2¼ cu. yd. model HO purchased in July, 1956.

Fred J. Doyle is Plant Superintendent at the Hookset, N.H. stationary plant that produces 11 sizes of stone and 3 grades of sand. Voicing their satisfaction with the new power-shift model HO, he says, "The pry-out bucket action does a beautiful job—comes out with a heaped load every time. New HO has loaded out up to 2,000 cubic yards in 10 hours operation. We have also found the HO excellent for shifting rail cars."

Owners of pits, quarries, mines and plants continue to show their preference for rubber-tired tractor-shovels because of their greater mobility and usefulness. And among rubber-tired tractor-shovels none can match the combination of versatility and productive capacity of the new 4-wheel-drive "PAYLOADER" units, size for size.

More reliable traction . . . easier, faster and safer operation . . . greater digging power are some of the "PAYLOADER" advantages that appeal to operators who know tractor-shovels best. Your "PAY-LOADER" Distributor wants you to prove on your own work that these new units are the most useful, productive and profitable tractor-shovels you can own. A call will bring you a demonstration.



### Hydraulic Load-Shock-Absorber

This load-shock-absorber in the hydraulic system smooths out the ride, permits faster load-carrying speeds over rough terrain—with less spillage. You get more load in the bucket—you keep more in the bucket while traveling at higher speeds . . . and the result—you deliver more yards per load and more loads per hour.



**PAYLOADER®**  
MANUFACTURED BY  
**THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.**  
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY



### THE FRANK G. HOUGH CO.

705 Sunnyside Ave., Libertyville, Ill.

Send data on 4-wheel-drive tractor shovels as checked:

- ☐ Model HO (2¼ Yd. Payload, 1¾ Yd. Struck)  
☐ Model HH (1¾ Yd. Payload, 1½ Yd. Struck)  
☐ Model HU (1½ Yd. Payload, 1 Yd. Struck)

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

55

# How would you decide?

A roundup of actual day-to-day in-plant problems  
and how they were handled by management men



## Can You Fire a Worker Who Said He Was Out Sick When He Wasn't?

### What Happened:

A FEW HOURS BEFORE his shift started Robert Wilson phoned a couple of his friends at the plant. He asked them to report him sick that day and the next as he had to drive a friend to Washington. The foreman called Wilson's lodging to find out if he needed any help. On learning that Wilson wasn't in, the foreman left a message for him to call back. The next day when the foreman phoned again

Each incident given in this department is taken from a true-life grievance which went to arbitration. Names of some principals involved have been changed for obvious reasons. Readers who want the source of any of these cases may write to Rock Products.

he was told that Wilson wasn't in and that he had not picked up the previous day's message.

The foreman became suspicious. He questioned the workers who had reported Wilson "sick" and got the whole story. When Wilson got back, he was fired. Wilson felt this was altogether too rough. He argued:

1. A man is innocent until he's proved guilty. The foreman hasn't proved conclusively that I wasn't sick.
2. The rule is I can't be fired without a warning—and I didn't get any warning.
3. Other employees have done the same—or worse—and they didn't get canned.

The foreman's answer was:

1. It's pretty darn clear that Wilson wasn't sick.

2. If the worker hadn't been found out, he could have collected sick pay he wasn't entitled to. That's dishonest.
3. Maybe it is the custom, but there's nothing in the contract that requires a warning notice be given to a worker before discharge.

### Was the foreman:

Right? ☐ Wrong? ☐

### What Arbitrator David Stowe Ruled:

"It is reasonable to conclude that there were reasons other than illness for Wilson's absence. It constituted a misuse of the sick leave privilege and the company had sufficient justification for taking some disciplinary action. The Referee finds no restriction in the contract that requires that a discharge must be preceded by a warning. The only restriction is that the discharge must be for just cause. Mr. Wilson's record with the company is entirely clear of any previous indication of disciplinary trouble. The company had the choice of several degrees of disciplinary action which would have been less drastic for a first offense, and at the same time would have been severe enough to prevent its recurrence. While Wilson was guilty of misuse of sick leave, in light of his past good record and in light of the disciplinary actions normally taken in offenses of an equally serious nature, the penalty of discharge in this case is too severe. The company shall reinstate Robert Wilson to his former position with full seniority, but without any pay for time lost."

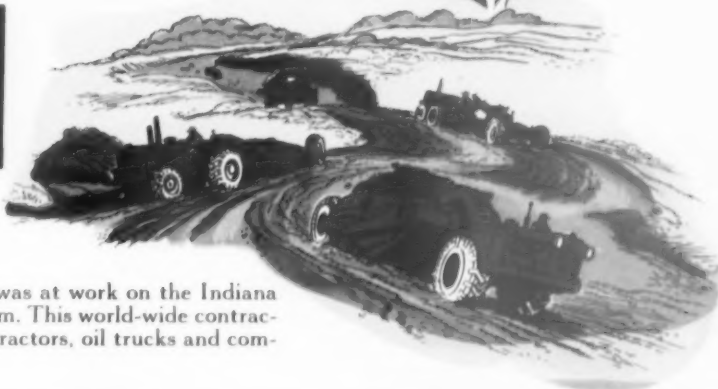
(Continued on page 37)

# B.F. Goodrich

*job inspection tour with Bill,  
your traveling B. F. Goodrich reporter*



## Building a turnpike



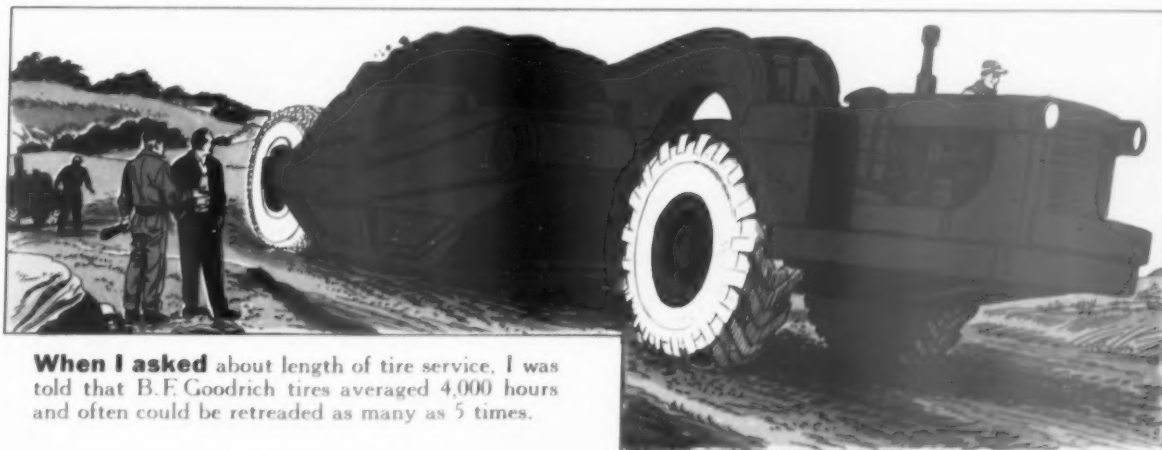
**S. J. Groves & Sons Co.** equipment was at work on the Indiana Turnpike near Howe the day I visited them. This world-wide contractor was using fleets of graders, scrapers, tractors, oil trucks and compactors 120 hours a week.



**I found** that sandy soil made the going tough for earth movers carrying 16-yard loads. But the company reported that B.F. Goodrich Super Traction tires were doing an exceptional job. Altogether, they said, they were using 7 different types of B.F. Goodrich tires.



**B. F. Goodrich all-nylon** tires have done a great job of reducing "down-time" to a minimum, and that means lower operating costs and increased efficiency, they reported.



**When I asked** about length of tire service, I was told that B.F. Goodrich tires averaged 4,000 hours and often could be retreaded as many as 5 times.

**more** →

# Hauling stone

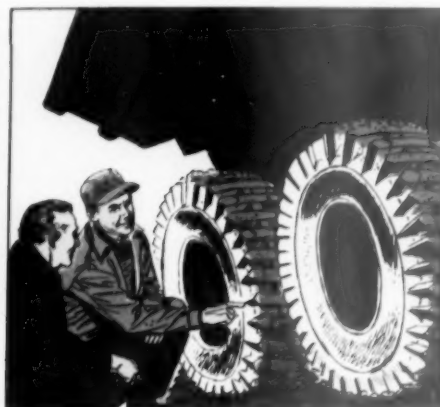


**Jernigan Trucking Co.** operates 17 trucks in and around Augusta, Georgia. In addition to stone, the trucks carry 8 to 20 tons of asphalt, top soil,

sand and gravel. Trucks work year 'round, says owner A. C. Jernigan, but busiest times are in the summer when temperatures go well over 100°.



**Hauling stone** over back-country roads for Little River bridge approaches was a problem for Jernigan. Giant loads of stone and rocky, rutted roads caused even new tires to blow out and fail within 30 days or less. After Jernigan switched to B.F. Goodrich *all-nylon* All-Purpose tires, they had no more blowouts. Competitors who did not switch continue to have trouble.



**Many B.F. Goodrich** *all-nylon* All-Purpose tires have gone over 50,000 miles—an all-time record on this operation.



**"Tire cost** is important, but we find the best tire is the cheapest in the long run," Office Manager H. B.

Leonard told me. "And we get every dollar's worth out of a B.F. Goodrich *all-nylon* All-Purpose tire."

# Earth moving



**I found O'Connor** Construction Co. tractors and 13-yard scrapers at work clearing a right-of-way in central Illinois. Tires carry a payload of over 22 tons, plus equipment weight.



**O'Connor Construction Co.** relies on B.F. Goodrich road service to keep its 110 all-nylon Super Traction and 40 Universal tires always ready for work. The tread designs are ideal for the job and give good all-around traction.



**"Keeping on schedule** is important on this earth-moving job," the general superintendent told me. "We're turning this old road into a 4-lane highway."



**B.F. Goodrich tires** work 3,000 hours on the original tread, the superintendent said, then are retreaded and give an additional 3,000 hours of service.

**more** →



# Whatever your job... Wherever you work... **B.F. Goodrich**

road service is  
as close as your phone



**THERE'S A B. F. GOODRICH TIRE FOR EVERY OFF-THE-ROAD JOB**



**All-Purpose** tires work on paved or dirt roads or in the rough on such jobs as logging, sand and gravel hauling, excavating, etc. *All-nylon* or rayon construction. Sizes 6.00-16 through 12.00-24.

**Universal** tires are designed for power wheels on trucks and tractors that pull trailer equipment or for free-rolling wheels in severe service. *All-nylon* construction. Sizes 7.00-15 through 24.00-29.

**Rock Service** tires are designed for mining, quarrying and dirt-moving operations. Newest BFG tire. *All-nylon* cord body in tubeless or conventional construction. Sizes 12.00-24 to 33.5-33.

**Earth Mover Traction** tires are designed for free-rolling wheels on scrapers, earth-moving wagons and other pulled equipment. *All-nylon* construction. Sizes 14.00-20 to 24.00-29.

**Super Traction** tires work on drive or free-rolling wheels of dirt-moving rigs. *All-nylon* construction, sizes 18.00-25 to 24.00-29. **Tractor Grader** type, sizes 9.00-24 to 18.00-26.

**Rock Logger** tires are built for drive and front wheels on dump and logging trucks, cement mix trucks, quarry and construction machinery. *All-nylon* construction. Sizes 8.25-20 to 14.00-24.

Any one of the following B.F. Goodrich zone offices will arrange service

Phone the one nearest you

Atlanta, Ga. DR 8-4561  
Charlotte, N.C. ED 4-3066  
Chicago, Ill. ES 8-8800  
Cincinnati, Ohio BR 1-7800  
Cleveland, Ohio PR 1-0827  
Dallas, Texas RI 1-5601

Denver, Colo. TA 5-1267  
Detroit, Mich. TY 5-8850  
Houston, Texas CA 7-5228  
Jacksonville, Fla. EL 6-4167  
Kansas City, Kan. MA 1-4400  
Los Angeles, Calif. RA 3-6111

Memphis, Tenn. WH 8-6761  
Minneapolis, Minn. FE 2-5474  
Needham, Mass. NE 3-5815  
New Orleans, La. CA 6341  
New York, N. Y. OR 9-0330  
Philadelphia, Penna. JE 5-5800

Phoenix, Ariz. AL 3-6168  
Pittsburgh, Penna. HI 1-5200  
St. Louis, Mo. PR 3-2600  
Salt Lake City, Utah DA 2-2405  
San Francisco, Calif. AT 2-9620  
Portland, Oregon CA 3-5621

**Free!** Directory of B.F. Goodrich Truck Tire Distributors—nation-wide listing of the names, addresses and phone numbers of BFG distributors who offer road service—and B.F. Goodrich Truck Operators Handbook—facts and figures on BFG tires, load and inflation tables, maintenance tips, etc. Send for your FREE copies today!

B. F. Goodrich Tire Co.  
A Division of The B. F. Goodrich Co.  
500 S. Main Street, Akron 18, Ohio

Please send me a FREE copy of:

- ☐ Directory of B. F. Goodrich Truck Tire Distributors  
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Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Specify B.F. Goodrich tires  
when ordering new equipment



Your B.F. Goodrich dealer is  
listed under Tires in the Yellow  
Pages of your phone book

## Labor Relations

Continued from page 32



### Can a Senior Worker Whose Job Is Eliminated Claim a Junior Worker's Higher-Rated Job?

#### What Happened:

**J**OHAN HUDAK'S JOB was done away with. He was given two weeks' notice and told to exercise his seniority. He asked to displace a worker with less seniority in a higher-rated job. The company said "No!" Hudak could only displace a junior worker in a job on the same or a lower level. Hudak wouldn't take "no" for an answer. He argued:

1. There's nothing in the contract about not being able to "bump" into a higher job.
2. The company's decision interfered with his seniority rights.

#### The company answered:

1. The contract says nothing about being able to "bump" into a higher job. It says "another" job, and that has always been taken to mean on the same level or a lower level.
2. Any other interpretation would make hash out of a company's promotion policy.

#### Was the company:

Right? ☐ Wrong? ☐

#### What Arbitrator Hiram Hall Ruled:

"The basic soundness and application of the downward movement doctrine and its corollary rule of nonpromotion in lieu of layoff, is demonstrated by a number of arbitration decisions in similar cases. These decisions say in effect 'that displaced employees may not use seniority to move to a higher classification in the absence of a vacancy.' Permitting displaced workers to 'promote themselves' by bumping incumbents out of higher rated jobs is one of the ways

in which existing seniority relationships could be seriously disrupted. It would make a shambles out of the job classification system and would create a maze of inconsistencies with resultant grievances. The grievance of John Hudak is denied."



### Can You Give an Employee Warning Notice For Arguing With His Supervisor?

#### What Happened:

**F**RED MULLER was a welder, and when he finished a job at 4:10, in the afternoon, his foreman told him to start on another assignment. "But I've got only 10 min. until wash-up time," Muller protested.

When the foreman insisted that Fred do as he was told, the worker continued to argue. He did this for 10 minutes. By then it was wash-up time and he left for the locker room. The foreman gave him a warning notice. Fred protested:

1. I had a grievance and I had a right to talk to my foreman.
2. I told him that it was no use starting a job because I wouldn't get it finished.

The company felt that Fred was stalling in the first place, and secondly, if he had a grievance, he should have obeyed the supervisor's order—and then filed a grievance later on.

#### Was the company:

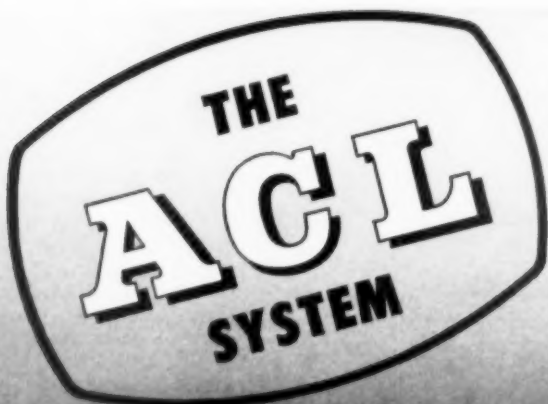
Right? ☐ Wrong? ☐

#### What Arbitrator R. R. France Ruled:

"It is likely that Muller felt strongly that the foreman was being unfair in insisting that the work be started. He therefore was unwilling to accept the foreman's decision without further attempts to change his mind. But to permit a worker to continue to argue with his foreman after a reasonable length of time could result in disruption of the work process and an undermining of the foreman's authority.

"The contract provides a grievance procedure to protect workers from unfair decisions by supervisors. The grievance procedure also is instituted to settle differences of opinion without disrupting operations. If Muller felt that the foreman's decision was unfair, he still should have obeyed it, and then obtained redress by submitting a formal grievance. Instead, he continued to press his case for what, in the opinion of the arbitrator, was an unreasonable length of time. In the process he thwarted the foreman's attempt to get the work started. Grievance denied."

END



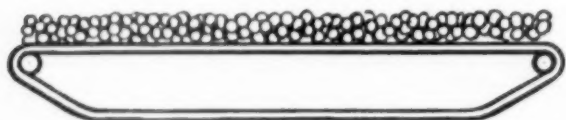
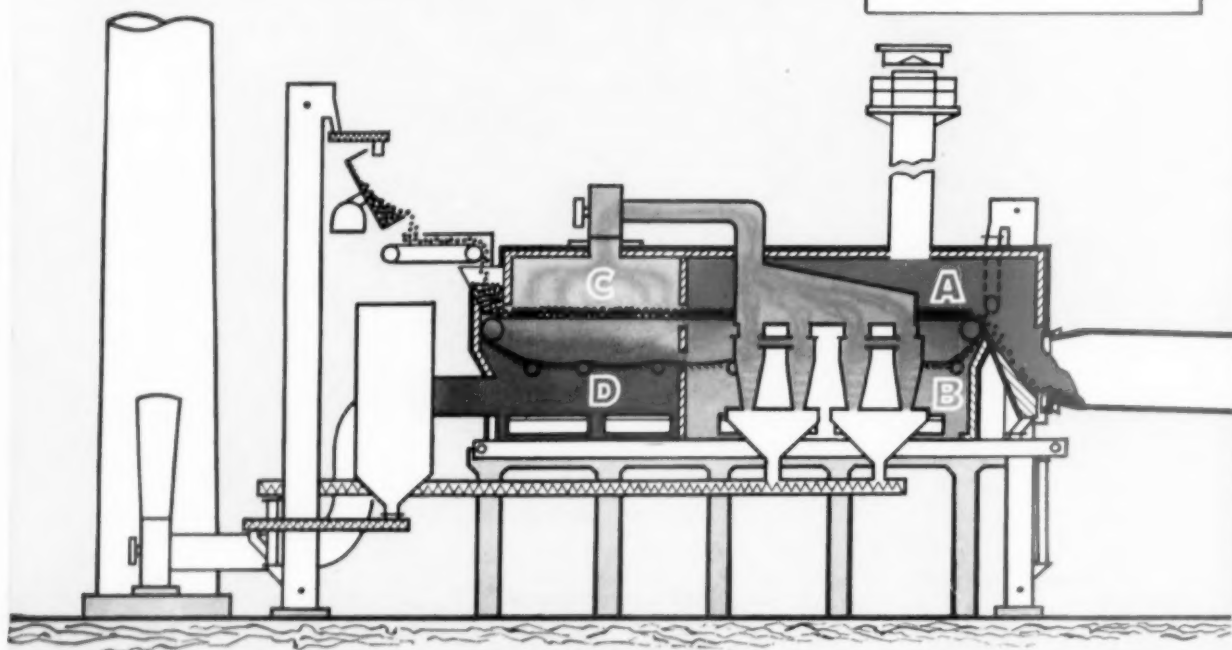
## Cuts Cost

**... puts you in a  
better competitive  
position — HERE'S WHY ▶**



### LESS DUST LOSS

Double pass of gases through traveling bed of pellets reduces dust loss below 1% of feed weight without an additional dust-collecting system. Valuable processed material is saved. Dust load of exhaust gas is lower than in any other system.

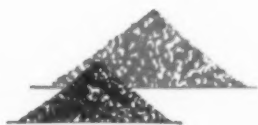


**Traveling Grate Affords Many Advantages** Because feed volume on traveling grate is constant, kiln operation is uniform and more efficient. There is no segregation of mix. Pelletizing locks in and maintains proportions of components. "Flushing" is eliminated, "ringing" minimized. Voids between pellets permit escape of moisture and gases without fluidization of bed. Because clinker maintains pelletized characteristics, it moves through the rotary kiln uniformly and burns easily.

**E**FFECTIVE DUST FILTRATION . . .  
efficient heat transfer . . . more  
uniform, better burning clinker . . .  
substantial savings in fuel, power re-  
quirements, space and manpower . . .  
maintenance economy—all these im-

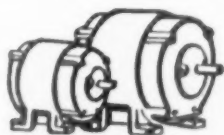
# ALLIS-

# of Producing Cement



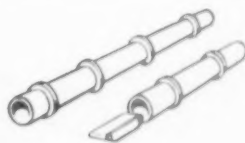
## LESS FUEL

Fuel consumption for ACL systems now in operation averages 600,000 Btu per barrel of clinker. Conventional long, dry-process kilns range from 750,000 to 1,000,000 Btu. Powdered coal, fuel oil, natural or coke oven gas may be used.



## LESS POWER

The ACL system for burning cement clinker requires about 2.3 kw/hr per barrel of clinker for operation of kiln department. This is about one-third less power than required by rotary kilns using other pre-heating systems.



## LESS SPACE

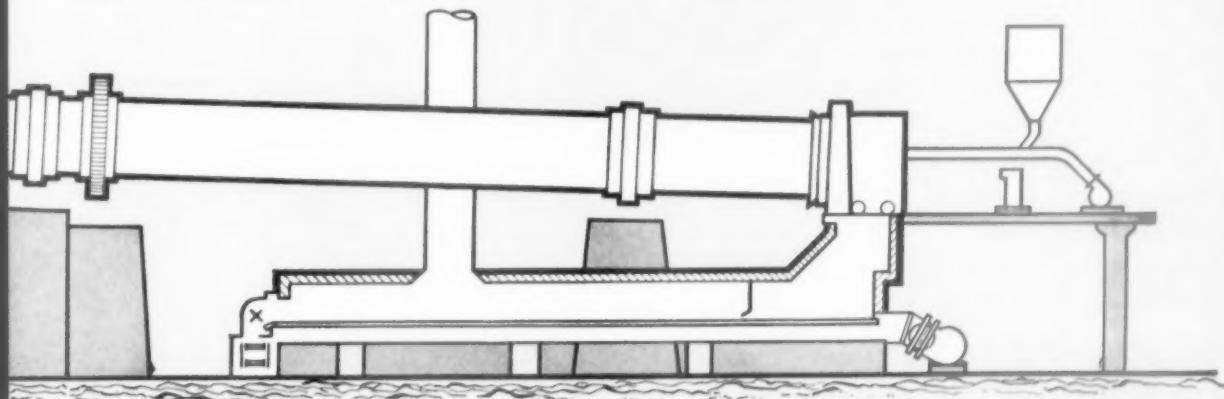
Entire ACL system—grate, kiln and cooler — is about 40% shorter than conventional long kiln installations. The totally enclosed traveling grate is about as high as the average kiln feed end housing.

## How the Double-Pass System Works

Partial calcining and dust reclamation take place as hottest gases pass through the pellet bed on traveling grate. Gas temperatures are reduced from about 1800 to 500 degrees in this first pass (A to B). Next, gases pass through cyclones where larger dust particles

are removed, and carried back to pelletizer. Final dust filtering takes place as gases pass through moist pellets on feed end of grate. In the second pass (C to D) gas temperatures are further reduced.

ACL is an Allis-Chalmers trademark.



portant advantages, and many more, are yours with the ACL system.

**New Bulletin Available** A new bulletin, describing the ACL system, Allis-Chalmers kilns and kiln auxili-

aries, is ready for distribution. To get your copy, see your nearby Allis-Chalmers representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin. Ask for Bulletin 07B8431.

**58 Installations by Leloup Licensees since 1950**



A-5108

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# CHALMERS

ROCK PRODUCTS, April, 1957

# ***G-800 TRACDRIL***

**GOES  
WHERE  
YOU  
WANT  
IT...**

And starts drilling! Just one man can move a self-propelled CP Tracdri from hole-to-hole in double-quick time . . . requires no "bull work" . . . tows its own compressor. "Knee-action" tracks compensate for uneven ground. A hydraulically operated U-Arm assures quick positioning for running bench holes or lifters. Hard hitting 4" CP-400 Drill and CP Drill Carriage are combined to afford maximum drilling speed, feed and stability.

Reversible tramming motors enable the Tracdri to whip into reverse, go forward and pivot . . . have "dead man controls" for greater safety.



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PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS  
DIESEL ENGINES • ROCK DRILLS • HYDRAULIC TOOLS  
VACUUM PUMPS • AVIATION ACCESSORIES



# PEOPLE IN THE NEWS

## Celotex Appointments

HENRY W. COLLINS, executive vice-president, has been elected president of The Celotex Corp., Chicago, Ill., to succeed Otis S. Mansell, who has been named chairman of the board. Mr. Collins joined the company 32 years ago and became executive vice-president in 1948. Mr. Mansell, who has been president since 1948, will continue as chief executive officer.

## Vice-Presidents Retire

W. R. BLAIR has retired as vice-president and manager of the El Paso, Texas, plant of Southwestern Portland Cement Co., Los Angeles, Calif., and T. K. Partridge, Los Angeles, has retired as vice-president in charge of sales. Herman Liebreich, formerly assistant manager at the plant, has been appointed district manager to succeed William R. Blair.

## American-Marietta Director



JAMES H. ACKERMAN, president of the Dragon Cement Co., division of American-Marietta Co., Chicago, Ill., has been elected a director of the parent company. Identified with Dragon Cement Co. and the cement industry all of his business career, Mr. Ackerman has also served as a director of the Portland Cement Association.



John J. Gates



Col. Harry H. Haas

## Houdaille Announces Executive Appointments

COL. HARRY H. HAAS has been appointed vice-president of operations for construction materials production of Houdaille Industries, Inc., Buffalo, N.Y. Col. Haas has been vice-president and general manager of the Buffalo Crushed Stone Corp., a division of Houdaille Industries, since 1955, and will be succeeded by John J. Gates, formerly special assistant to Ralph F. Peo, president of Houdaille. Col. Haas, who for 18 years served in various executive capacities with Nu-stone Products Corp. of New Jersey,

resigned as secretary and member of the board of directors of that firm when recalled to military service in 1942. He retired from the service in 1955 to join Houdaille Industries. Mr. Gates, a graduate of Queens University, Kingston, Ontario, Canada, with a B. S. degree in civil engineering, resigned as vice-president of the Metropolitan Sand and Gravel Corp., New York, N.Y., to join Houdaille in 1956. His office will be at the headquarters of Buffalo Crushed Stone Corp., Bowmansville, N.Y.

## P.C.A. Personnel, Promotion Changes

MARTIN A. LEWIS, assistant to the vice president for promotion, Portland Cement Association, Chicago, Ill., has also been named coordinator of interstate highway promotion. Homer A. Humphrey has been appointed senior highway consultant. He was formerly manager of the personnel training classes, a position now assumed by Warren G. Burres, formerly of the structural and railways bureau. Leo H. Corning, formerly director of promotion planning and engineering services, has been named chief consulting structural engineer. He will be succeeded by George H. Paris, formerly

assistant vice-president for promotion.

Mr. Lewis joined the Portland Cement Association in 1934 and served with the district offices in St. Louis, Washington, D.C., and Chicago before his appointment as assistant to the vice-president for promotion in 1953.

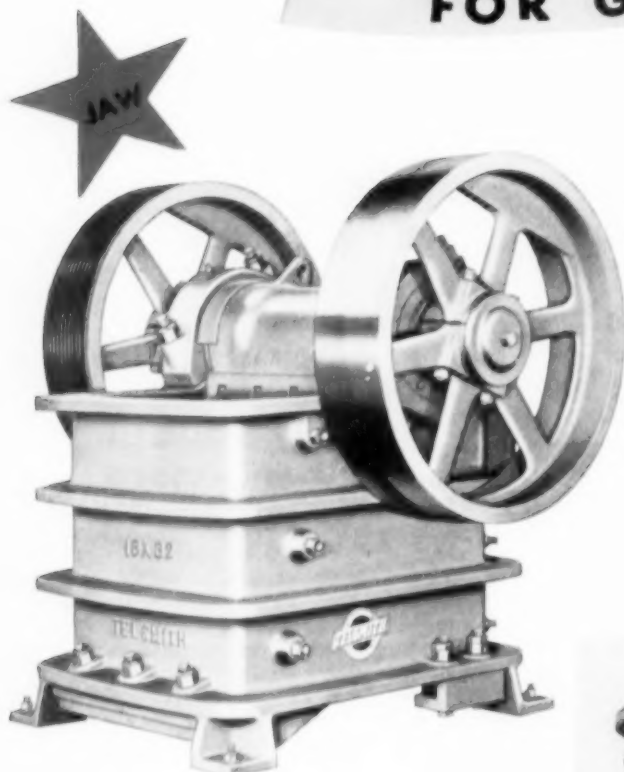
Mr. Humphrey is a graduate of Michigan College of Mining and Technology, Houghton, Mich. He became associated with the P.C.A. in 1937 and served as an engineer in the field of soil-cement and highway research. In 1952 he was made manager of the personnel training program.

(Continued on page 44)

# TELSMITH<sup>®</sup>

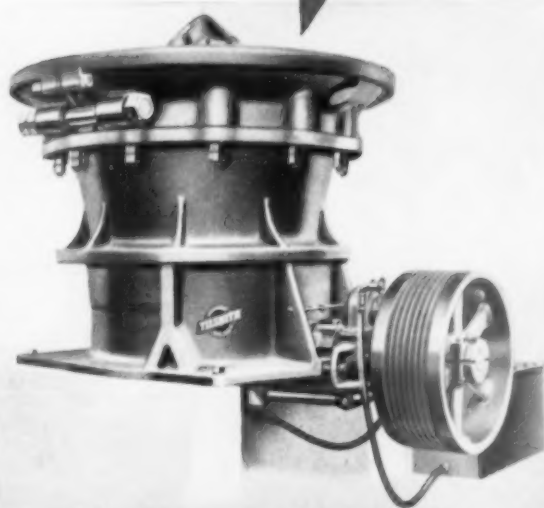
PRIMARY

FOR GREATER CAPACITY



● **Telsmith Jaw Crusher** has a compact, massive cast steel frame and swinging jaw . . . with large cylindrical roller bearings throughout for higher speed, bigger capacity, and lower power requirements. With its vigorous, force feed, and remarkably effective crushing action, the Telsmith Jaw Crusher turns out a more uniform and cubical product, in larger capacities. Its easy, simple adjustment allows a wide product size range. Made in 10 sizes, from 10" x 16" to 42" x 48", 10 to 1000 tons per hour. Get Bulletins 280 and 280-A.

● **Telsmith Gyratory Breaker** is short and compact. Steel frame and crown, and rigid pillar shaft are all guaranteed against breakage. Largest feed and crushing areas of any gyratory breaker . . . the famous Telsmith parallel-pinch crushing stroke . . . cut steel drive gears, improved full, force-feed oiling and a roller bearing countershaft give not only faster crushing but crushing by impact, for a better cubical product. 6 sizes: 8B to 25B, 30 to 400 tons per hour. Get Bulletin 281.



**SMITH ENGINEERING WORKS**

**505 E. CAPITOL DRIVE**

**MILWAUKEE 1, WISCONSIN**

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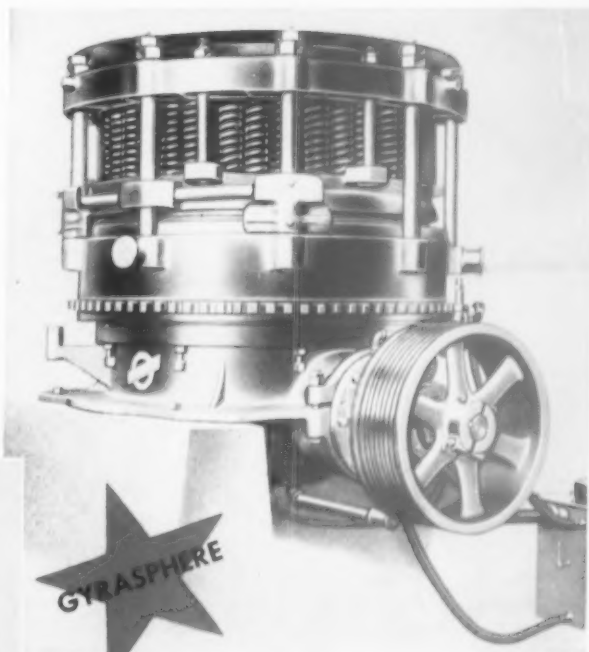
Cable Address: Sengworks, Milwaukee

# CRUSHERS

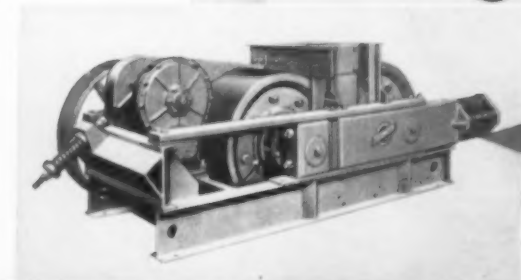
SECONDARY

LOWER COSTS • BETTER PRODUCTS

● **Telsmith Style S Standard Gyrasphere** has new, heavier design with many time-tested features for greater capacity, a more uniform product, low-cost operation, and quick accessibility for easier maintenance. 24" to 66" sizes, 3½" to 15" feed openings, coarse or medium bowl; 10 to 550 tons per hour. **Style FC Fine Crushing Gyrasphere** has all Style S features with several additional fine crushing improvements. 24" to 66" sizes, 2½" to 5¾" feed openings, coarse, medium or fine bowl, 6 to 250 tons per hour. Send for Bulletin 274.



● **Telsmith Intercone** is an all-steel, high-speed, lower priced secondary crusher. Turns out very uniform, cubical, coarse or intermediate product. Lead bronze bearings, Telsmith patented rotary seal, roller bearing countershaft, full force feed oiling, spring relief protection. 18" to 28" sizes; 15 to 70 tons per hour. Get Bulletin 270.



● **Telsmith Double Roll** for large capacities of intermediate or fine aggregate at low reduction ratios. Compact, light in weight, low in cost. Anti-friction bearings run in oil. 24" x 16" to 40" x 22" sizes. 10 to 132 tons per hour. New 30" x 26" size has star-gear drive; 20 to 160 tons. Get Bulletin 282.

CS-8-R1

**SPECIALISTS IN THE DESIGN AND ENGINEERING  
OF COMPLETE AGGREGATE PLANTS**



"dumps faster  
than any bucket  
I've ever used"

"I've been a hoisting engineer for over 45 years," states Jess Reinhart of the City of Chicago Department of Water and Sewers, "and in my opinion there just isn't any bucket that has more digging power, sheds cleaner or dumps faster than a Kiesler bucket!"

Take another look at the photo above and you will readily see the reason for Mr. Reinhart's statement. Note that the leverage of the arms—the 2 lever-arms—exerts its powerful force directly to both shells and cutting edges, thus digging in for more of a payload EVERY time. Note, too, the minimum amount of cable and reeving necessary to achieve that maximum in power and performance.

NO DEAD-WEIGHT, BUT AGE-OLD PROVEN PRINCIPLES OF LEVERAGE — backed by over 64 years of bucket-manufacturing experience . . . this is your assurance of superior performance on every job with a KIESLER bucket. . .

#### PROMPT SERVICE AVAILABLE

We offer complete factory service on Kiesler buckets and all buckets whatever their make. Whatever your problem, call Kiesler first.

#### GUARANTEE

Kiesler Buckets are guaranteed to outperform and do a bigger day's work than any other Bucket of equal weight, width and size, when properly reeved and operated.

JOS. F. KIESLER CO.

**KIESLER**  
Since 1892

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#### PEOPLE IN THE NEWS

(Continued from page 41)

Mr. Burres is a civil engineering graduate of Purdue University, Lafayette, Ind. He joined the Association in 1952 as a member of the structural and railways bureau, conducting short courses for engineers and contractors. He has also assisted as an instructor in the personnel training program.

Mr. Corning has been with the P.C.A. since 1929. He was appointed assistant manager in 1935 and manager of the structural and railways bureau in 1949. He became director of promotion in 1952 and director of promotion planning and engineering services in 1956. He is a member of the American Concrete Institute, American Society of Civil Engineers, and International Association for Bridge and Structural Engineering.

Mr. Paris is a graduate of the University of Illinois, Urbana, Ill., with a B.S. degree in civil engineering. He joined the Association in 1946 and was appointed assistant director of promotion in 1953. Three years later he became assistant to the vice-president for promotion.

#### Elected Vice-President



JOHN W. ROCKWOOD has been elected a vice-president of Basic, Inc., Cleveland, Ohio, according to an announcement by H. P. Eells, Jr., president. Mr. Rockwood will be in charge of the dealer sales division, while H. N. Barrett, Jr. continues as vice-president in charge of industrial sales. A director of the National Lime Association, Mr. Rockwood is also active in the Finishing Lime Association of Ohio, and was formerly a division chairman of the National Mineral Wool Association. He has a background of many years of experience in the building products industry, and was in charge of sales for Kelley Island Co. when Basic, Inc. purchased the business in 1955.

(Continued on page 49)

# Your best assurance for a *continuous* supply is a completely integrated supplier!

Kraft Bag Corporation comes closest to being the most completely integrated manufacturer of multiwall shipping sacks in the industry!

Check this chart and see for yourself why Kraft Bag Corporation should be your supplier!

Tell us when we may call to discuss your requirements.



3 Generations  
of Bag Making  
Experience



FEATURES	KRAFT BAG CORPORATION	OTHER SOURCES ?
Forest Lands	✓	
Pulp Mill	✓	
Bleach Plant	✓	
Paper Mill	✓	
Multiple Bag Plants	✓	
Natural Kraft	✓	
Colored Kraft	✓	
Bleached Kraft	✓	
Creped Kraft	✓	
Wax Laminated Kraft	✓	
Asphalt Laminated Kraft	✓	
Wet-Strength Kraft	✓	
Water Repellent Kraft	✓	
Stak-LOK Super Rough Kraft	✓	
Valve Bags — sewn or pasted	✓	
Open Mouth Bags — sewn or pasted	✓	
Flat Sewn Valve Bags	✓	
Flat Sewn Open Mouth Bags	✓	
KRAFT-lok Valve Closure	✓	
Creped Tape	✓	
Gummed Tape	✓	
Filter Cord	✓	
Sewing Thread — (the only material we do not produce ourselves)		
1-2-3-4 Color Printing	✓	
Art Department	✓	
Bag Development and Research	✓	

## KRAFT BAG CORPORATION

Gilman Paper Company subsidiary

630 Fifth Avenue, New York 20, N. Y. • Daily News Bldg., Chicago 6, Ill.

Plants at St. Marys, Georgia and Gilman, Vermont

Exclusive Sales Agents for  
Kraftpacker

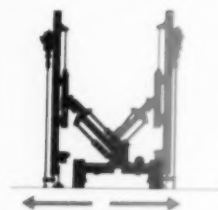
Automatic Open Mouth Bag Filling Machine

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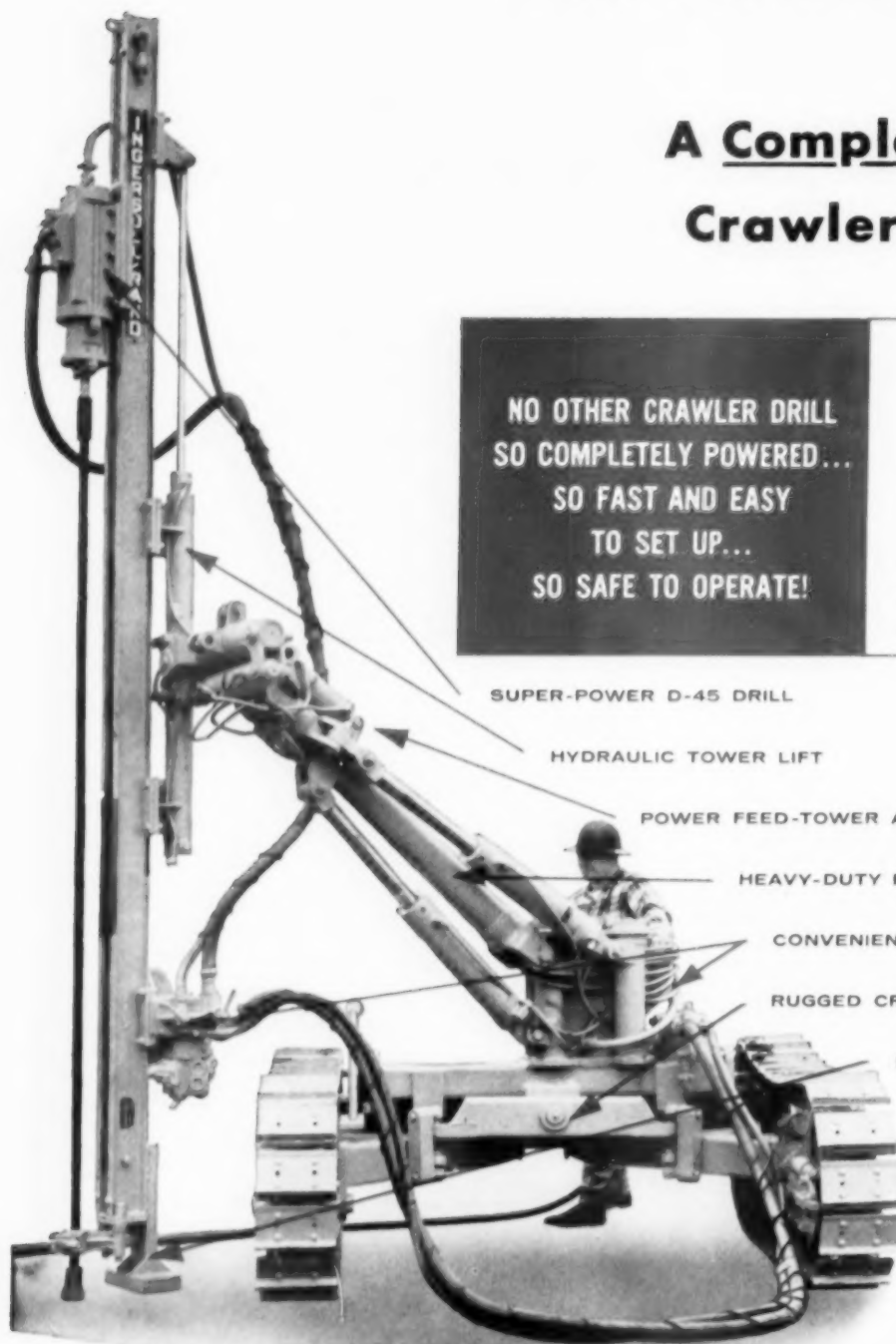
# Announcing the

## A Completely New, Crawler Drill at its

NO OTHER CRAWLER DRILL  
SO COMPLETELY POWERED...  
SO FAST AND EASY  
TO SET UP...  
SO SAFE TO OPERATE!



1. Hydraulic Boom Swing  
of 9'11" gives maximum usable  
hole pattern with a single crawler  
setup and permits line hole drilling  
along a face over the tracks.



SUPER-POWER D-45 DRILL

HYDRAULIC TOWER LIFT

POWER FEED-TOWER ADJUSTMENT (5 ways)

HEAVY-DUTY BOOM

CONVENIENT CONTROLS

RUGGED CRAWLER ASSEMBLY

FEED-TOWER FOOT PAD

MAXIMUM FLEXIBILITY  
WITH  
COMPLETE SAFETY

FOR A PACE-SETTING DRILLING COMBINATION

ROCK PRODUCTS, April, 1957

# C Ingersoll-Rand CRAWL-IR

## Completely Mechanized RUGGED BEST!



**2. Hydraulic Boom Lift**  
raises and lowers booms in vertical plane—covers distance of 7'3" with tower in horizontal position.



**3. Hydraulic Feed-Tower Tilt**  
sets feed tower at any angle.



**4. Hydraulic Feed-Tower Swing**  
sets tower for vertical drilling on any slope—or positions drill for horizontal holes at any angle to crawler travel.



**5. Hydraulic Feed-Tower Lift**  
slides feed tower up or down, in or out—permitting foot pad to be set firmly on the ground.

**H**ERE, in one unit, is a completely mechanized and self-propelled heavy-duty crawler drill that will greatly expand the scope of Wagon Drill operations. With *all* boom and feed-tower adjustments hydraulically controlled, you can make faster, safer and easier setups for drilling in *any position*. And because the CRAWL-IR can tow its own portable compressor, you save manpower and release auxiliary equipment generally required to move drills and compressors on the job.

The following advantages and features make this the fastest-acting, easiest drilling and safest unit of its type ever developed. It can be supplied with percussion or rotary drills, and with a wide range of optional hydraulic combinations when all of the power features are not required. Ask your I-R representative for complete information on this new self-propelled blast hole drill—or send for a copy of Bulletin No. 4189.

### ADVANTAGES

**SELF-PROPELLED** — The CRAWL-IR is powered by two independently controlled heavy-duty piston type I-R air motors. Knee-action frame construction permits these motors to take the crawler over rugged terrain.

**SPEEDS SETUPS** — Five hydraulic cylinders quickly and safely position and lock the feed-tower in position by manipulation of convenient controls located on the boom base.

**FAST STEEL HANDLING** — Reverse rotation in the powerful D-45 drill when used with coupled steel provides a convenient and easy method of adding and removing steels in a hurry. The D-45 also incorporates release rotation which permits hammer action on the steel for loosening joints and fighting stuck steels.

**MORE DRILLING TIME** — The bulk of the time formerly spent on conventional Wagon Drills in moving, hand wrench time and steel handling is now turned into drilling time. With the drill positioning completely mechanized one man operation is entirely feasible.

# Ingersoll-Rand

11 Broadway, New York 4, N. Y.



S-515

POWER THE CRAWL-IR WITH A GYRO-FLO COMPRESSOR

Enter 1544 on Reader Card

ROCK PRODUCTS, April, 1957

47



Barber-Greene Idlers provide extra years of low cost operation . . . the ultimate in belt protection.

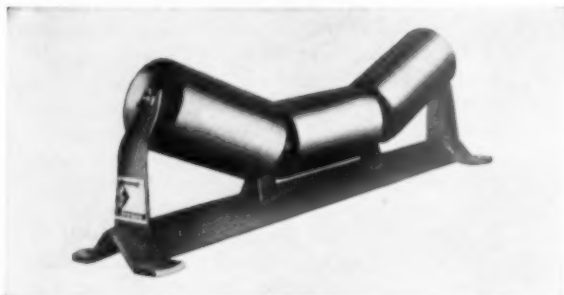
## Barber-Greene Idlers . . . still rolling after twenty years

Installed 20 years ago, Barber-Greene Idlers are still rolling at this Material Service Corporation plant in Chicago.

There are no secrets behind the long-life records established by Barber-Greene Idlers. Advanced design plus top-quality materials, plus precision manufacture with the most modern production machines make the difference. The user benefits in lower maintenance costs, less down time, and longer idler life.

Barber-Greene advantages include virtually unbreakable jig-welded base frames, self-shedding base angles, interchangeable rolls made of heavy steel tubing, seamless steel grease reservoirs of ample capacity, and two-degree tilt to facilitate belt alignment.

Whether it's a ball bearing unit for normal service, or a roller bearing unit for the most rugged conditions, Barber-Greene has the idler that's right for any conveyor . . . right for any job.



Available in widths from 16" to 60", with 4", 5", or 6" rolls, the Barber-Greene line includes standard troughing carriers and return rolls, flat belt and picking table carriers, self-aligning carriers and return rolls, grain idlers, rubber impact carriers, and self-cleaning return rolls.

56-22-1PE

# Barber-Greene

AURORA, ILLINOIS, U.S.A.



CONVEYORS...LOADERS...DITCHERS...ASPHALT PAVING EQUIPMENT

Enter 1469 on Reader Card

## PEOPLE IN THE NEWS

(Continued from page 44)

### Jensen Brothers Retire

J. K. JENSEN and J. R. Jensen have retired as chairman of the board and vice-president, respectively, of the Janesville Sand and Gravel Co., Janesville, Wis., but will continue as directors. Ellis E. Jensen is president of the firm and Gerald C. Condon is secretary-treasurer. George F. Meyer has been appointed vice-president and production manager; G. Roy Jensen, vice-president in charge of sand and gravel operations, and John D. Husen, vice-president in charge of sales. J. K. Jensen was president until two years ago when he became board chairman. J. R. Jensen has served as vice-president since 1908. The firm was organized in 1907 by J. K. Jensen and C. N. Nygaard as the Janesville Cement Shingle Co. It was expanded and reorganized in 1910 as the Janesville Sand and Gravel Co. J. R. Jensen joined the firm in 1908.

### Columbia Sales Appointments

WALTER B. SIPPEY has been appointed director of sales for the Columbia Cement Division of the Pittsburgh Plate Glass Co., Zanesville, Ohio. He was formerly sales manager and will be succeeded by Karl L. Rothermund, who has been serving as assistant sales manager.

### Re-elected President

GORDON TONGUE has been re-elected president of Northwestern Portland Cement Co., Seattle, Wash., and James D. Burns has been re-elected chairman of the board. Other officers are C. T. W. Hollister, chairman of the executive committee; Harold Shefelman and Frank Kiernan, Jr., vice-presidents; D. G. Metcalf, secretary-treasurer; and H. Johnson, assistant secretary-treasurer.

### Gypsum Plant Manager

ROBERT L. KILGORE has returned as manager of the Dover, N.J., plant of National Gypsum Co., Buffalo, N.Y. He succeeds Henry J. Reed, who has been transferred to the Mobile, Ala., plant. Mr. Kilgore has been manager of the Trenton and Raritan, N.J., plants for the past three years.

### Heads Ready-Mix Firm

DONALD O. ERICKSON, general manager, Glacier Sand and Gravel Co., Minneapolis, Minn., has been named president of the Allied Ready Mix Co.

(Continued on page 52)



multiwall valve  
troubles with Bemis  
**SHUR-SEAL<sup>®</sup>** valves



sleeves out of place



sleeves missing



valves stuck together

The integral sleeve of Bemis SHUR-SEAL Pasted Valve Multiwalls is a special extension of any of the plies or of several of them, extended to the same or different lengths. Thus the valve can be tailor-made to fit your product. It can NOT be out of place . . . or missing . . . or stuck together.

With the integral sleeve, the flap is always there, always in place, always acts the same in every bag. It opens quickly and easily at the packer. It can never interfere with the packer spout entering the valve and it will never be pushed into the bag to get into the product.

A tailor-made variation of the SHUR-SEAL valve will provide you with the exact bag for your product and packing requirements. Check with your Bemis Man... he'll help you determine just which variation of the SHUR-SEAL valve is correct for you.

Another **Bemis** first . . .  
for YOUR benefit



General Offices—St. Louis 2, Mo.  
Sales Offices in Principal Cities

Enter 1423 on Reader Card

# Before you buy any giant-sized Measure TD-24 giant-sized



When you're 'dozing through rock and other materials, instant fingertip Hi-Lo shifting is a big cycle-speeder. And it cuts operator effort way down!



With full-time "live" power on both tracks, the TD-24 almost builds the road itself—hugging the mountain slope, giving added operating ease, safety, and capacity! That's another bonus from exclusive time-proven Planet-Power steering.



Try holding a 19-ton load on the blade with any other crawler this big—making a turn as this TD-24 is doing with both tracks pulling, while stockpiling coal with a special wing-type blade. The TD-24's operator can make "round-house," feathered, or pivot turns—with fingertip ease!

# tractor advantages!



**INTERNATIONAL<sup>®</sup>  
CONSTRUCTION  
EQUIPMENT**

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE INCLUDING: Crawler, Wheel, and Side-Boom Tractors  
... Self-Propelled Scrapers and Bottom-Dumps ... Crawler and Rubber-Tired Loaders  
... Off-Highway Trucks ... Diesel and Carbureted Engines ... Motor Trucks

**When you buy a big crawler** look beyond sheer size and weight. You may be paying for enough extra "iron" to cause a startling jump in fuel and upkeep costs. So compare. Weigh bigness against provable working and earning capacity! Measure these giant-sized TD-24 advantages that have proven out over 8 years of on-the-job success!

## Eliminates "dead-track drag!"

*Does the giant you're considering steer with full-time "live" power and "live" traction on both tracks?* TD-24 users by the thousands have proved that any crawler *this big* is obsolete without exclusive, time-proved Planet-Power steering advantages!

Planet-Power steering eliminates power-wasting, load-limiting "dead-track drag." Upgrade, downgrade, or on the level, you can smoothly turn a heavily-loaded TD-24—under positive control!

*Does the big one you're looking at give cycle-speeding on-the-go shifting?* The TD-24 does! And the exclusive two-speed planetary system teamed with a 4 speed synchromesh transmission—gives instant, stall-preventing and time-gaining Hi-Lo shifting, *without declutching*.

*Does that big one you need have the genuine in-seat, seconds-fast, all-weather International gasoline conversion starting?* Or the operating ease, power-transfer efficiency, and service-simplicity of the International Cerametallic-faced engine clutch? Or 8 practical speeds forward and reverse? Only the TD-24 has all these, plus dozens of other giant-sized advantages!

*Prove to yourself the TD-24 beats all other giant-sized power—for performance value—for big-scale ability to make you big money.* Ask your International Construction Equipment Distributor for a demonstration of a Gear-Drive or Torque-Converter TD-24!

**Heap-loading the sideboarded International "75" Payscraper** in less than a minute proves the economy and efficiency of the TD-24 as a "pusher."



## PEOPLE IN THE NEWS

(Continued from page 49)

### Coplay Plant Manager

PAUL A. LENTZ, formerly senior process engineer for Universal Atlas Cement Co., Northampton, Penn., has been appointed plant manager for Coplay Cement Manufacturing Co., Coplay, Penn. He replaces Roy W. Dieffenferfer, vice-president in charge of operations, who died November 8. Mr. Lentz is a graduate of Lehigh University, Bethlehem, Penn., where he received a bachelor's degree in industrial engineering.

### Heads Massey Firm

GEORGE H. REDDING, JR., has been named president of Massey Concrete Products Co., Chicago, Ill., to succeed his father, George H. Redding, who passed away November 23. W. Lyle McDaniel has been appointed executive vice-president.

### N.A.L.I. Chairman

RUSSELL HUNT, president, Southwest Lime Co., Neosho, Mo., was elected chairman of the board of the National Agricultural Limestone Institute, Washington, D.C., at the recent annual meeting. Mr. Hunt is also a member and director of the National Lime Association.

### Board Chairman Retires

JOSEPH BROBSTON has retired as chairman of the board of Hercules Cement Corp., Philadelphia, Penn., after 24 years of service with the company and 56 years of leadership in the cement industry.

### Vice-President of Sales

WESLEY H. GALLOWAY has been promoted from sales manager to vice-president of sales for Ross Island Sand and Gravel Co., Portland, Ore.

### President of Buffalo Gravel

HARRY T. HAWKINS has been elected president of the Buffalo Gravel Corp., Buffalo, N.Y. He succeeds the late Carlton J. Lewis. Mr. Hawkins joined the company 20 years ago as sales manager and has been vice-president for the last three years.

### President Resigns

DAVID J. WARSAW has resigned as president of the Hay-Con Tile Co., Detroit, Mich., and will be succeeded by Robert M. Bonus. Mr. Warsaw is a former director of the N.C.M.A.

## OBITUARIES



**James Savage**, chairman of the board, Buffalo Crushed Stone Corp., Buffalo, N.Y., which he founded in 1904, died February 7 at the age of 77. Well known in the crushed stone industry, Mr. Savage had served as secretary-treasurer for most of his 53 years with the firm. Two years ago he was named chairman of the board. A few years after establishing the company, Mr. Savage was joined in partnership by the late F. W. Schmidt of Summit, N.J. After Mr. Schmidt's death, he remained in partnership with the Schmidt family. Later The General Crushed Stone Co., Easton, Penn., entered the partnership. In 1954 the Buffalo Crushed Stone Corp. was purchased by Frontier Industries, which later became Houdaille Industries, Inc. Mr. Savage actively participated in affairs of the National Crushed Stone Association and served as secretary-treasurer for the past 25 years. He was also active in the New York State Crushed Stone Association.

**Louis Gelbman**, Gelbman, Inc., Pelham Manor, N.Y., a pioneer in the concrete and concrete products industry, died February 15 at the age of 64. Inventor of the "vibration under pressure" method of manufacturing concrete products, Mr. Gelbman held many patents on methods of using concrete, concrete products equipment and other items related to the concrete industry. He organized his own concrete block plant in 1920. During World War I he built concrete barges and ships for the U.S. Navy and during World War II manufactured heavy weight concrete ship ballast for the Navy. He was also awarded a Marshall Plan citation for technical aid to Europe. At the time of his

death Mr. Gelbman was completing a plant to manufacture lightweight concrete aggregates on an automatic machine of his own design.

**Harry A. Dutton, Sr.**, Los Altos, Calif., founder of the Dutton Asbestos & Supply Co., passed away on January 1, while vacationing in Mexico. He was 85 years of age. A pioneer in the asbestos industry, Mr. Dutton joined the Hoff Asbestos Manufacturing Co. following graduation from Stanford University, Calif. In 1902 he purchased Mr. Hoff's interest and changed the name to the Asbestos Manufacturing & Supply Co., Inc., San Francisco. He maintained the business until 1919, when it was sold to Plant Rubber Co. In 1930 Mr. Dutton established the Standard Asbestos Co. which later became the Dutton Asbestos & Supply Co. and is now being carried on by his son, Harry A. Dutton, Jr.

**Merle P. Long**, a director of Concrete Materials, Inc., Kansas City, Kan., died January 1 in Menlo Park, Calif., where he and Mrs. Long had been spending the holidays with their daughter and son-in-law. Mr. Long had resided in Ponca City, Okla., since 1911 except for five years when he lived in Kansas City. He was prominent in both Ponca City and Kansas City business circles and was interested in civic, business and youth affairs, serving as a member of the board of Education for 10 years and as president for eight years. He also served as president of the Ponca City Chamber of Commerce.

**Vernon C. Moynes**, retired director of Canada Cement Co., Montreal, Canada, died suddenly on February 9. He was 66 years old. Born in Belleville, Mr. Moynes joined the company in 1911 and upon his retirement last year was named a director. One of the founders of the Canadian Construction Association, he was known from coast to coast by members of the construction industry.

**Oliver David Havard**, retired superintendent of the Egypt, Penn., plant of the Giant Portland Cement Co., Philadelphia, Penn., died January 11. He was 84 years old. Born in Homer, Ill., Mr. Havard was graduated from the University of Illinois, Urbana, Ill., with a degree in mechanical engineer-

(Continued on page 55)



## The real cost of MOTORS

The cost of a motor extends over its entire lifetime. It does not end with purchase price. *Cost goes up* with every shutdown, every motor maintenance stoppage. *Cost stays down* when you buy quality. And quality means Allis-Chalmers.

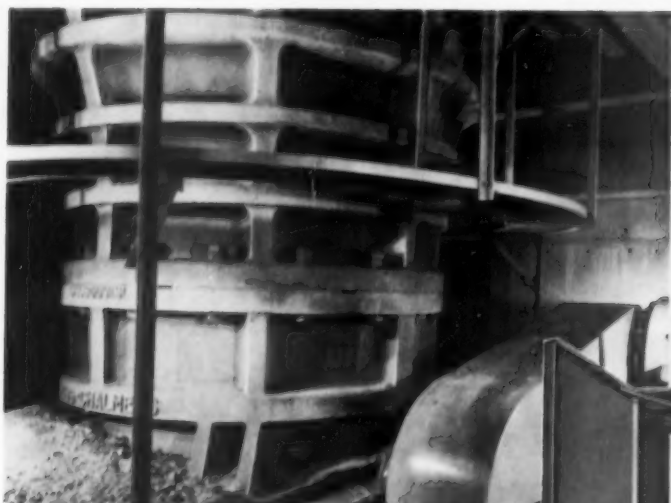
All of these extras that don't show on the Allis-Chalmers nameplate — more copper, more iron, more cooling provisions—exemplify the quality-craftsmanship that goes in before the price tag goes on.

For the "long run," either as a new machinery component or as replacement, specify Allis-Chalmers. Find out more about *real* quality in motors from your A-C district office or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.

# ALLIS-CHALMERS



# custom control cuts crusher downtime



ALLIS-CHALMERS  
**CONTROL**

As a leading builder of gyratory crushers for more than 75 years, Allis-Chalmers has expert knowledge of crusher control problems . . . and how best to solve them. Special controls for crushers, developed by Allis-Chalmers, offer important operating and protective features that minimize costly downtime . . . assure continuous, dependable operation.

## Control Features

### Motor Overload Protection

Two separate sets of thermal overload relays . . . one set sounds remote alarm horn and energizes warning light at slightest sign of overload. If warning is not heeded, second set of relays stops motor when temperature reaches danger point.

### Maximum Torque Starting

Control permits maximum torque starting, when desirable. Maximum torque starting often clears crusher jams.

### Jog-Reversing Controller

This feature permits rocking to clear jam.

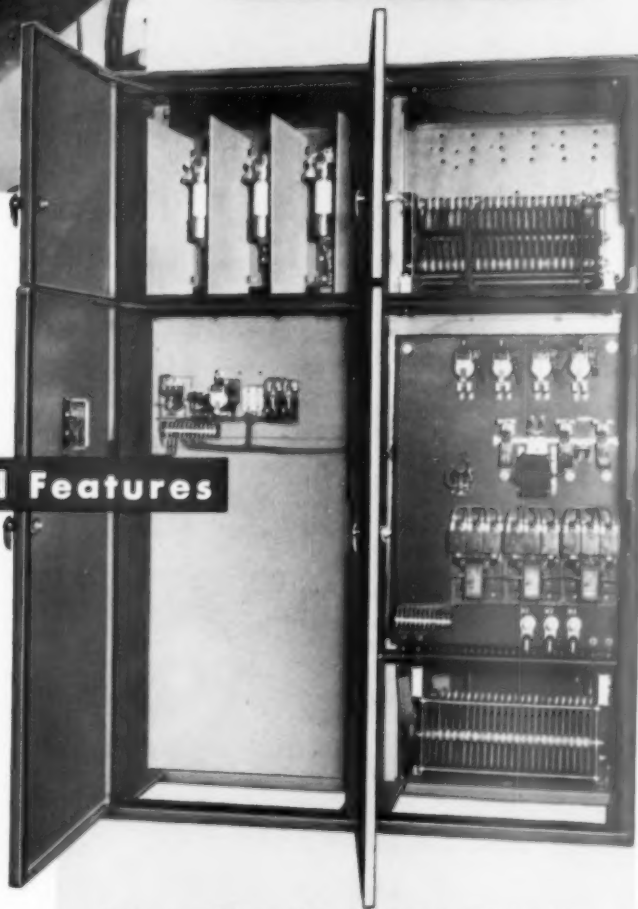
### Time-Delay Undervoltage Relay

Crusher rides through momentary voltage dips.

### Stall Protection

Motor is disconnected by instantaneous relay when current is greater than normal peak load.

For detailed information, contact your A-C representative, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.



Type H voltage starter custom-engineered to control and protect wound-rotor motors driving primary gyratory crushers.

# ALLIS-CHALMERS



A-5206

## OBITUARIES

(Continued from page 52)

ing. He joined Giant Portland Cement Co. in 1913 as superintendent of the plants at Egypt, Penn., and Norfolk, Va., which position he held until his retirement in 1942.

**Joseph F. Fischer**, retired chief chemist at the Richard City, Tenn., plant of Penn-Dixie Cement Corp., New York, N.Y., died February 5 at the age of 76. Born in Germany, Mr. Fischer attended the Bavarian Polytechnicum in Munich. He joined the Dixie Portland Cement Co., predecessor of Penn-Dixie Cement Corp., in 1910, and was chief chemist from 1926 until his retirement two years ago.

**Stanley L. Arnot**, retired superintendent of the Sonora, Calif., plant of the United States Lime Products Corp., Los Angeles, Calif., died January 18. He was 67 years of age. Well known in the lime industry, Mr. Arnot had been associated with the company for 30 years, more recently in a consulting engineering capacity. A native of Markleeville, Calif., Mr. Arnot graduated from the University of California as a mining engineer.

**Hubert L. Gerstnecker**, plant engineer for White House Concrete Co., Cleveland, Ohio, died January 23 at the age of 66. Mr. Gerstnecker was an engineer on many large construction projects in the United States, and supervised construction of the Dnieper Dam in Russia and an oil refinery in Curacao, West Indies.

**John W. Peters**, founder and president of J. W. Peters & Sons, Burlington, Wis., died January 11. He was 71 years of age. His son, Jerome Peters, is vice-president and general manager of the firm, and his other son, Harold Peters, is vice-president and purchasing agent.

**Harry V. Anderson**, a director and former vice-president and general manager of the Middle States Concrete Co., Ashland, Ky., died recently following a short illness. He was 47 years old and had been associated with the firm since 1940, retiring about three years ago.

**Arthur Lapres**, retired district sales manager of Canada Cement Co., Montreal, Canada, died recently. He had been in retirement since 1951.

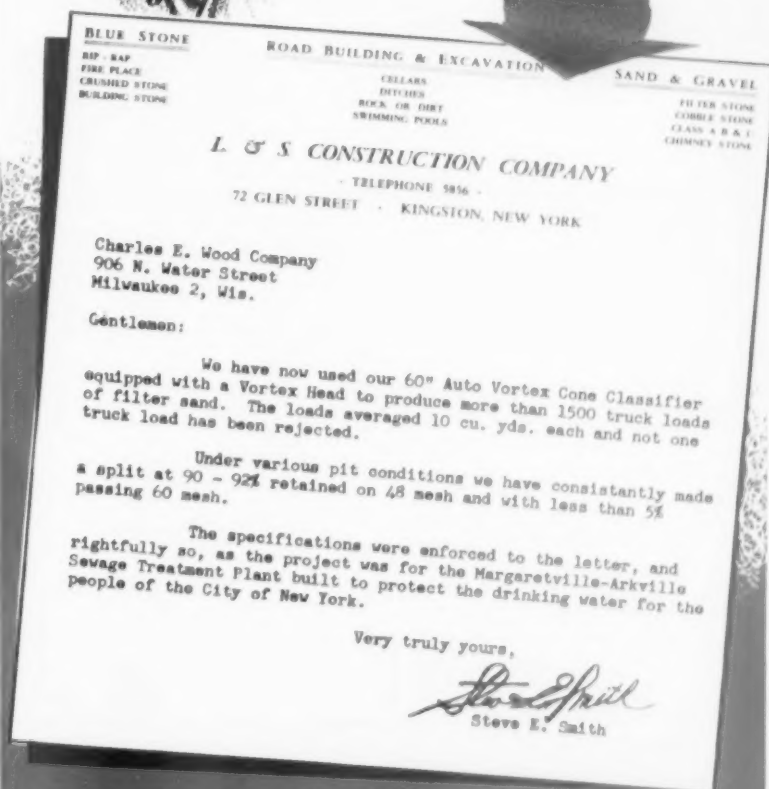
**Robert P. Kuhl**, president of the Dundee Sand and Gravel Co., Lake Zurich, Ill., died January 31. He was 40 years old.

END

## Speaking of Classification...



# CAN YOUR CLASSIFIER DO A JOB LIKE THIS?



This kind of performance makes friends for Auto-Vortex - a single Cone doing a special job well. • Auto-Vortex Classifiers will give you the same high performance in meeting CONCRETE SAND specifications. • They will eliminate your excess middle size without wasting your valuable passing 50 mesh sand. • Or, they will make a separate product out of this excess middle size. • Then, the Auto-Vortex BOWL Classifier will recover your passing 50 and 100 mesh sand and PUT IT IN YOUR PRODUCT without expensive pumping or bailing out of your waste pond.

## CHARLES E. WOOD CO.



## AUTO VORTEX CLASSIFIERS

906 N. WATER ST. • MILWAUKEE 2, WIS.

Write today for more information on how to get sharp gradations inexpensively!

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ROCK PRODUCTS, April, 1957

Enter 1515 on Reader Card

55

# Two NEW All-Weather rotary

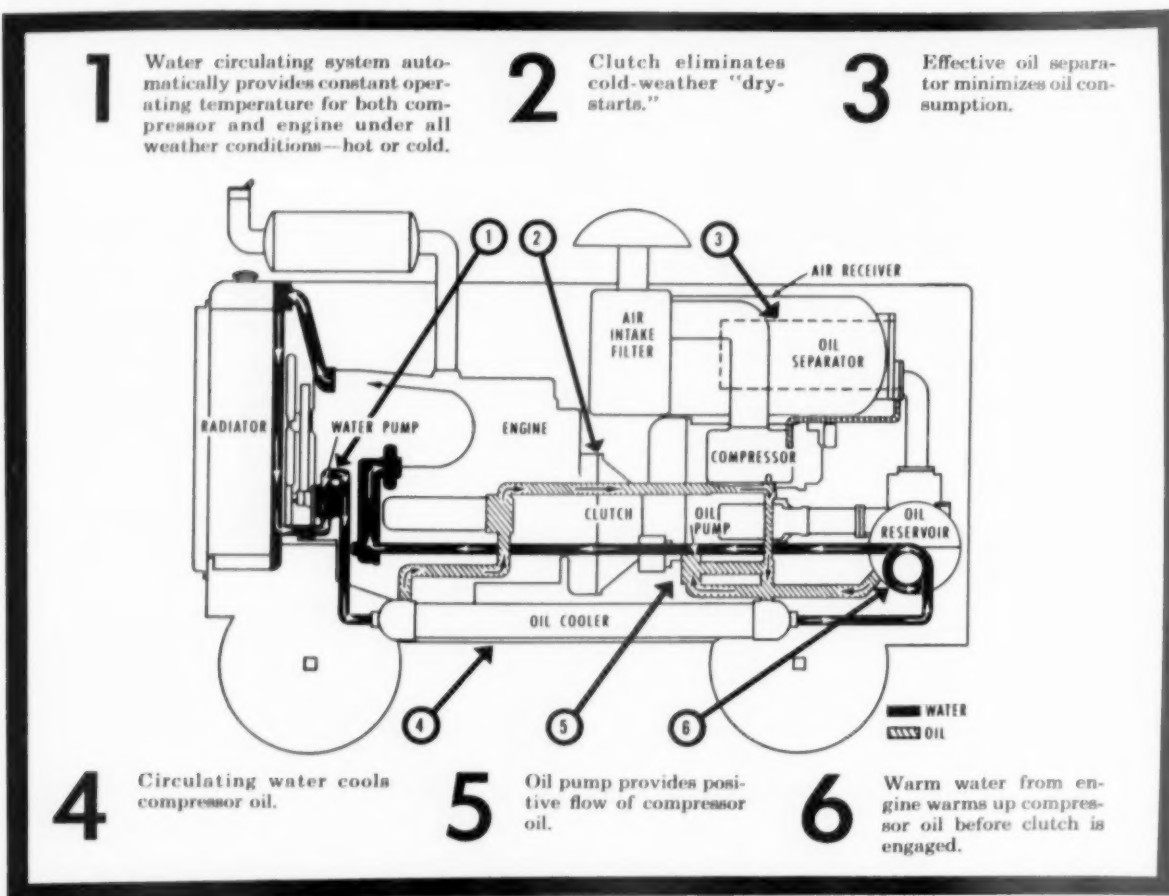


No "dry-starts" even on coldest mornings



No overheating, even in desert-hot weather

**Flow chart shows how Gardner-Denver water-oil cooling system operates**



**There's a Gardner-Denver Distributor in your area  
—see him for details**

# compressors by Gardner-Denver

feature the Gardner-Denver Water-Oil Cooling System



## Model RP125

Length, 10'6". Width, 4'8".  
Height, 5'0". Net Wt., 3540 lb.  
Available with gasoline or diesel  
engine.

## Model RP365-D

Length, 10'0". Width, 5'7".  
Height, 6'5". Net Wt., 7730 lb.

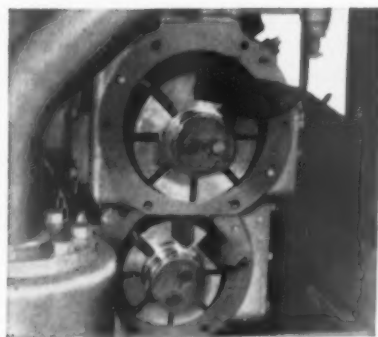


## Plus these field-proved features of the Gardner-Denver RP600 and RP900 portables

Inspection of working parts can be made in minutes. Removing screws from easily accessible end plate exposes blades for service. No piping or tanks block the way.

- Thriftmeter Control
- Vibrationless Operation

Write for complete details.



ENGINEERING FORESIGHT—PROVED ON THE JOB  
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

## GARDNER - DENVER

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Ave., Toronto 16, Ontario

Enter 1528 on Reader Card

ROCK PRODUCTS, April, 1957



MORE THAN 650 MILLION POUNDS OF TEXACO MARFAK HAVE BEEN SOLD

## BEAT THE DUST PROBLEM AND BOOST YARDAGE

Flying dust is no measure of getting yardage in a sand pit. But you can minimize this problem—keep your equipment in action—by lubricating on schedule with *Texaco Marfak*.

This world-famous chassis lubricant seals out dust and dirt, seals itself in the bearings... prevents rust. Its tough film stays put under heavy loads, keeping wear at a minimum.

On wheel bearings, use all-weather *Texaco Marfak Heavy Duty 2*. It provides extra protection against dirt and moisture, and assures safer braking for thousands of extra miles. No seasonal change required.

Or you can use just one lubricant, *Texaco Marfak Heavy Duty Special 2*, for chassis, wheel bearing, water

pump and other grease lubrication. This lithium-base, multi-purpose grease resists water washout, stands up in the toughest service—always pumps easily at low temperatures.

Using *Texaco Track Roll Lubricant* on rollers assures smooth-running operation and complete protection against both rust and wear.

Your Texaco Lubrication Engineer is specially trained to help keep contractors' equipment running smoothly under all conditions. You can contact him by calling the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, New York.



**TEXACO** Lubricants and Fuels  
FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN . . . METROPOLITAN OPERA RADIO BROADCASTS EVERY SATURDAY AFTERNOON

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# INDUSTRY NEWS

## Warner Reports Purchases

WARNER CO., Philadelphia, Penn., has purchased W. E. Johnson, Inc., Paoli, Penn., according to a report by John Curtin, Jr., Warner president. Included in the transaction are a stone quarry and a fleet of trucks for mixing and delivery of concrete.

In another announcement, Warner Co. disclosed the purchase of Lehigh Materials Co., Tamaqua, Penn. Lehigh, founded in 1948 by Lehigh Coal and Navigation Co., has been producing Lelite, lightweight aggregate, from high carbon shale.

The two companies were purchased for a total of 33,400 shares of Warner Co. stock, which has a current market value of approximately \$1.5 million, according to the annual report.

## Phosphate Project Begins

CENTRAL FARMERS FERTILIZER CO., Chicago, Ill., announced that work will be started immediately on its projected phosphate mine and processing plant near Georgetown, Idaho. At its annual meeting, the company decided to let contracts for the \$13.5 million project in order to have it in operation by October 1, 1958.

A pilot ore-recovery project at the plant site has shown that the cooperative can produce 60 percent more rock phosphate than was originally predicted, in addition to supplying material for the furnace, according to J. J. Lanter, president. The plant will use an electric furnace process and supply calcium metaphosphate for co ops serving farmers throughout the Ohio, Missouri, and upper Mississippi River basins.

## Sand, Gravel Co. Formed

ESCONDIDO ROCK AND SAND CO., Escondido, Calif., has been formed by Otto F. Einer and James L. Mains. The firm has constructed a new \$50,000 sand and gravel plant, where equipment includes dragging, washing and screening units, bulldozers and a truck fleet.

Mr. Einer is former owner of Palomar Rock and Sand Co. and Escondido Materials Co.



## Order Is Placed for 50 Steel Deck Barges

NEW YORK TRAP ROCK CORP., New York, N.Y., has awarded a contract to Richmond Steel Co., Inc., Richmond, Va., for the construction of 50 steel deck cargo barges of the type pictured at a total cost of nearly \$4 million, it was announced by Wilson P. Foss, III, Trap Rock president. With these additions the company's fleet of deck barges will number 260.

"The fast-growing need for crushed stone," Mr. Foss said, "has made it urgent that New York Trap Rock ac-

quire additional carriers for its products." The 50 new vessels are to be delivered over a three-year period, with 14 scheduled for completion in 1957. They will be 120 ft. long, 38 ft. wide, and will draw a little more than 11 ft. of water when loaded, says George Smith, the company's marine superintendent. Carrying capacity will be 1,350 tons. New York Trap Rock Corp. shipped more than 6,250,000 tons of crushed stone from its three plants on the Hudson River in 1956.

## Ideal Cement Co. To Build Albuquerque Plant

IDEAL CEMENT CO., Denver, Colo., has announced plans to go ahead with construction of a 1,000,000-bbl. per year cement plant in Albuquerque, N.M. Engineering studies have been underway for several months, and surveying and site preparation crews have been at the New Mexico site since January, 1957.

According to Cris Dobbins, president of Ideal Cement Co., construction plans call for installation of one rotary kiln equipped with electronic dust control. Provision is made for doubling capacity quickly when and if needed. Cost of the first stage will be \$10 to \$12 million, and completion is scheduled for early 1958.

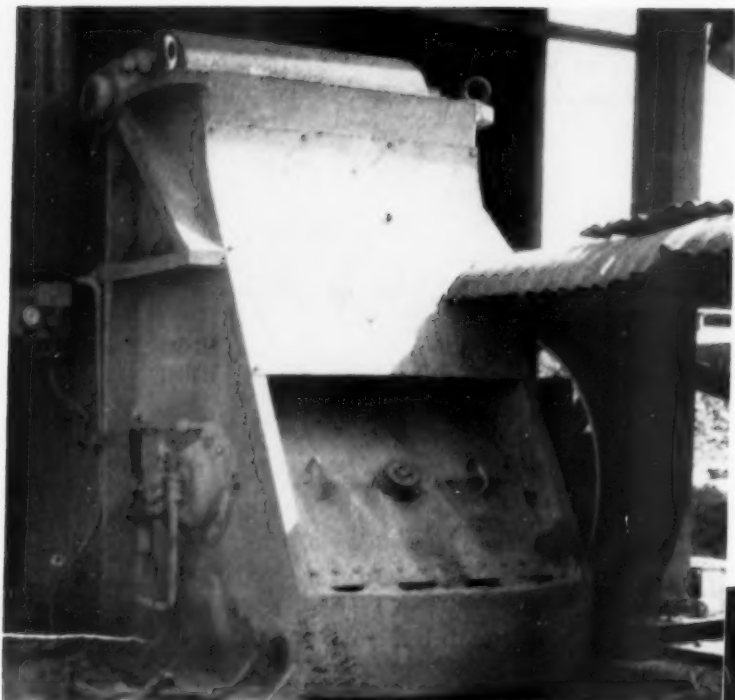
The new construction is part of the company's recently announced \$78

million expansion program. Ideal has 15 plants, which produced a total of 24,000,000 bbl. of cement in 1956, said Mr. Dobbins.

## Locates Limestone Supply

MISSOURI VALLEY LIMESTONE CO., Des Moines, Iowa, conducted exploratory borings on land east of Bedford, Iowa, discovering a six- or seven-year supply of limestone. The company engaged the Eblin Construction Co., Atlantic, Iowa, to strip off the overlay. A roadway to the new quarry also is being constructed. Missouri Valley Limestone Co. operates another quarry in the Bedford area, southwest of the city.

(Continued on page 63)



42" x 25" Kue-Ken in quarry crushing plant

Lower cost per ton crushing follows immediately when you switch to a Kue-Ken Crusher. While operating at more crushing strokes per minute for greater capacity, Kue-Ken consumes less horsepower. A crankcase-type lubrication system and the elimination of rubbing between jaw plates provides this superior performance. Kue-Ken is the only crusher with sealed mechanism operating in a bath of clean, filtered oil with dirt and grit sealed out. Crusher runs cool under heaviest crushing conditions. "Crushing without rubbing" principle of Kue-Ken eliminates abrasion, the main cause of jaw plate wear. Kue-Ken jaw plates outlast those of conventional crushers at least 5 times saving replacement costs and downtime. Overload or tramp iron actuates safety device that instantly releases flywheel avoiding damage to crusher. High capacity Kue-Ken will give you the capacity you need with a smaller size crusher. Study the saving you can make in the chart below.

Table of tons per hour that will pass through crusher with jaws set at dimension shown when measured in the closed position.

Table is based on crushing average hard, dry quartz or similar rock weighing at least 100 lbs. per cubic foot when crushed.

Kue-Ken crusher size	2"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	Horsepower range
24" x 12"	22	26	32	36	43	50	56					15 to 30
30" x 12"	32	35	38	42	55	70	76	85	110			20 to 30
36" x 10"	38	47	57	67	80	91	105					25 to 40
36" x 20"					70	82	90	115	135	160		30 to 50
42" x 25"					90	120	150	165	180	215	250	40 to 60



No damage on overload or tramp iron

Gone are the broken frames or toggles - the costly testimony to so-called safety toggles. Kue-Ken automatic control releases flywheel and permits it to run free without ratcheting. Crusher can be set to stop automatically on release of flywheel or to sound an alarm. On correction of overload or tramp iron, the flywheel can be quickly reset and the crusher put back into operation without costly delays.

WRITE FOR CATALOG

## KUE-KEN® CRUSHERS

"CRUSHING WITHOUT RUBBING"

STRAUB MFG. CO., INC., 8380 BALDWIN, OAKLAND 21, CALIF.

Jaw Crushers Gyratory Crushers Overhead Eccentric Crushers Revolving Screens  
Classifiers Feeders Rib Cone Ball Mills Concentrating Tables Vibrating Screens

Pennsylvania Crusher Division, Exclusive Licensed Eastern Manufacturer and Distributor, 323 S. Matlack St. West Chester, Penn.  
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VANCOUVER, B. C. Universal Equipment Co.

# An important message to producers and others who have an interest in the concrete products industry . .

*Beginning with the JUNE issue . .*

## the CONCRETE PRODUCTS Section of ROCK PRODUCTS will be EXPANDED and PUBLISHED as a SEPARATE MAGAZINE

Serving producers of concrete products:

Block . . . Prestressed . . . Pipe and Tile . . . Conduit . . . Masonry units  
Bins and Silos . . . Roof and floor systems . . . Vaults . . . Sills . . . Panels  
Cast stone . . . and other units and specialties.

And . . .

Producers of ready mix concrete for any purpose.

For more than ten years, the CONCRETE PRODUCTS Section has been an important part of ROCK PRODUCTS Magazine. Beginning in June, CONCRETE PRODUCTS will be published as a separate magazine devoted exclusively to the interests of concrete products and ready mix producers, manufacturers or sellers, as outlined above.

The new expanded CONCRETE PRODUCTS will be focused on methods, management, and merchandising problems facing producers in meeting today's booming production demands, and in planning for even greater markets of tomorrow.

Every producer of concrete products or ready mix concrete may continue to receive CONCRETE PRODUCTS without charge by returning the coupon below completely filled out, signed, and attached to his business letterhead.

All others who cannot qualify as a manufacturer or merchandiser of concrete products or ready mix concrete may also receive CONCRETE PRODUCTS at a nominal \$3.00 per year rate, see coupon.

**BE SURE . . .** Fill out and mail. Send this coupon today.

**DON'T MISS THE FIRST ISSUE OF THE NEW, EXPANDED CONCRETE PRODUCTS**

*Start with the JUNE issue*

ROCK PRODUCTS, April, 1957

Please Attach Filled-In Coupon to  
YOUR BUSINESS LETTERHEAD  
(This is required for Circulation Audit purposes).

The principle concrete product (s) of my company is/are indicated "1", "2", "3", in order of importance below.

Block Ready mix Concrete

Masonry Units Pipe

Prestressed Units Precast Units

Other (What?)

Please send me CONCRETE PRODUCTS "Free".  
My qualifications listed above.  
Please send me CONCRETE PRODUCTS for \$3.00  
per year.  
My business is \_\_\_\_\_  
Remittance attached Bill me

Name \_\_\_\_\_

Title \_\_\_\_\_

Firm \_\_\_\_\_

Street & No. \_\_\_\_\_

City and State \_\_\_\_\_

Your signature \_\_\_\_\_ Title \_\_\_\_\_

List other people in your organization to receive  
CONCRETE PRODUCTS at your company address

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

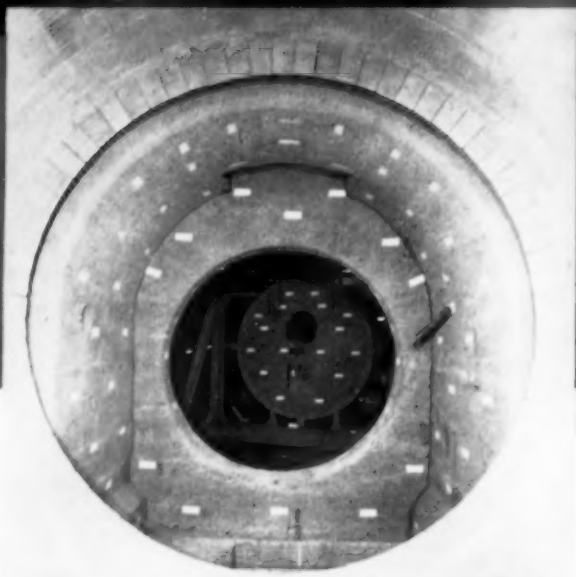
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List other qualified people separately

(Free Paid (by company))

## A. P. GREEN . . . SUPER HYBOND

### JOB-ENGINEERED MONOLITHIC KILN FIRING HOOD



A. P. Green job-engineered monolithic refractory linings readily meet the complex construction requirements and varied service conditions in rotary kiln firing hoods. Furthermore, they offer specific advantages which can be money-savers.

The photograph illustrates A. P. Green SUPER HYBOND as recommended and installed in a typical firing hood. Notice the joint-free surfaces and positive anchorage throughout the lining. These features provide maximum protection against premature failure resulting from dust penetration, bulging, and buckling. Complicated, expensive masonry has been eliminated, as have resulting structural weaknesses.



### **SUPER HYBOND**

is a natural choice for such installations. It is a super duty plastic that develops high strength throughout the entire thickness of the lining—increasing the holding power of the anchors. Its high refractoriness readily withstands excessive temperatures, such as might occur in the seal ring or crown areas. Spalling and abrasion resistance are excellent.

A. P. Green offers a complete line of refractory products for the cement and lime industry. Whatever your requirement, for specific recommendations without obligation, contact your local A. P. Green Distributor . . . he's listed in the yellow pages of your telephone directory.

## A. P. GREEN FIRE BRICK COMPANY

Mexico, Missouri, U. S. A.

**PLANTS:** Mexico, Mo.—Woodbridge, N. J.—Sulphur Springs, Texas—Jackson, Oak Hill, South Webster, Ohio—Philadelphia, Pa.—Troy, Ida.

**IN CANADA:** A. P. Green Fire Brick Co., Ltd., Toronto 15, Ontario

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*A. P. Green*  
**REFRACTORY  
PRODUCTS**



## INDUSTRY NEWS

(Continued from page 59)

### Industrial Sand Plant

HARDY SAND CO., Evansville, Ind., has erected a third plant near Camden, Tenn., which will provide grinding sand for the Ford Motor Co.'s glass plant at Nashville, as well as other area needs. The initial shipment was scheduled for April 1, 1957. The new plant has a capacity of 100 tph.

The Hardy Co., headed by Thomas H. Hardy, has been producing foundry sand in the Camden area since 1930. Two plants previously installed there process bond and molding sand at a rate of 65 tph., and washed siliceous sand for foundry and glass use at an 80 tph. rate.

### Starts Up Echo Plant

TEXAS PORTLAND CEMENT CO., Orange, Texas, has begun production at its Echo, Texas, plant, and deliveries to Gulf Coast areas have been started. The \$6 million plant has an initial capacity of 2000 bbl. per day. Announced by the firm's president, Kent B. Diehl Sr., prior to the plant's opening, was the appointment of Hans Frederiksen as assistant manager. A native of Denmark, Mr. Frederiksen was formerly director of operations of La Cemento Nacional of Ecuador. Allan Moore, former chief chemist and works manager of Pacific Portland Cement Co., is plant manager.

### Renames Vessels

MICHIGAN LIMESTONE DIVISION, United States Steel Corp., Detroit, Mich., announces name changes for two self-unloaders of its Bradley Transportation Line. The B. H. Taylor has been renamed the Rogers City, and the A. F. Harvey will be known as the Cedarville. The former has been named for the home port of the Bradley fleet, and the latter for the location of its newest dolomite limestone quarry. C. F. Beukema, president of Michigan Limestone Division, announced the name changes at the company's annual 25-year service awards dinner.

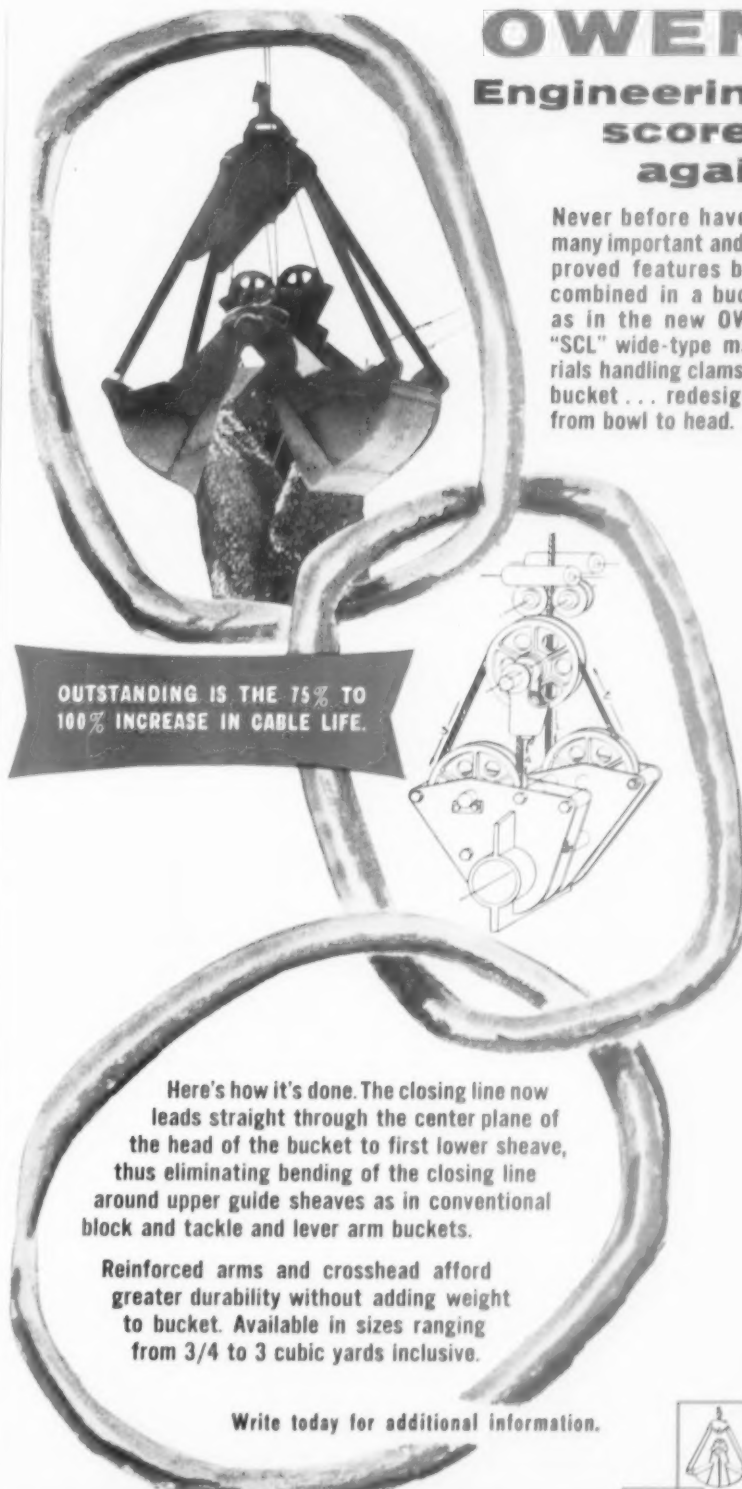
### Moves Plant

HUGHES SAND & GRAVEL CO., Mt. Vernon, Ind., has moved its operations to a new location near Wabash Memorial Bridge. Formerly installed at Scheidel Bottoms, the firm was closed down for 60 days last winter, during which period the moving operations were completed.

(Continued on page 64)

## OWEN Engineering scores again

Never before have so many important and improved features been combined in a bucket as in the new OWEN "SCL" wide-type materials handling clamshell bucket... redesigned from bowl to head.



OUTSTANDING IS THE 75% TO  
100% INCREASE IN CABLE LIFE.

Here's how it's done. The closing line now leads straight through the center plane of the head of the bucket to first lower sheave, thus eliminating bending of the closing line around upper guide sheaves as in conventional block and tackle and lever arm buckets.

Reinforced arms and crosshead afford greater durability without adding weight to bucket. Available in sizes ranging from 3/4 to 3 cubic yards inclusive.

Write today for additional information.

**The OWEN BUCKET Co.**

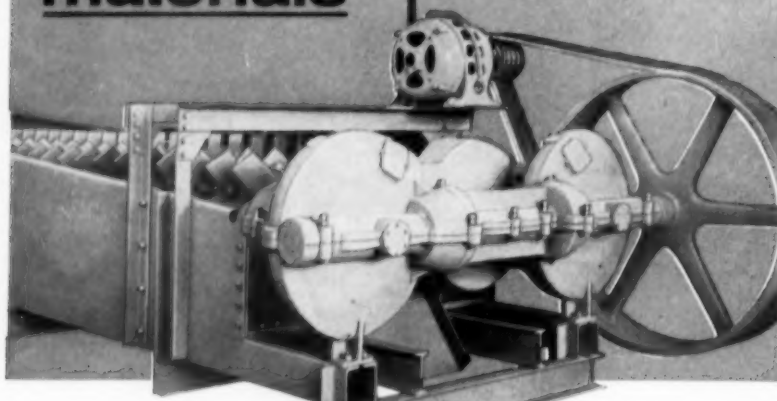
BREAKWATER AVENUE, CLEVELAND 2, OHIO

BRANCHES: New York • Philadelphia • Chicago  
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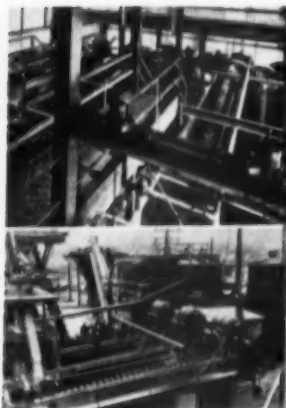
# High Capacities of clean materials

Developed from the world's first all-steel log washers built by McLanahan & Stone in 1894, these machines produce high tonnages of exceptionally clean materials—removing tough clay, soft rock and refuse with unequalled speed and economy. Available in Heavy-Duty and Mudmaster styles. Write for Bulletin WLO-1155 and MM-755.



## LOG WASHERS

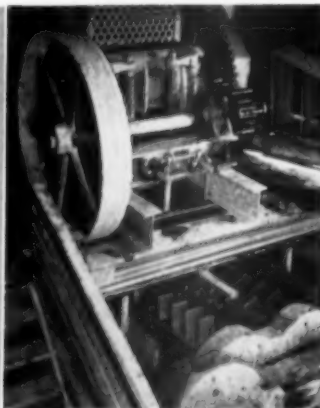
**McLANAHAN & STONE CORPORATION**  
252 Wall Street, Hollidaysburg, Pennsylvania



Three 30' McLanahan Logs in world's largest phosphate plant.

McLanahan Logs washing iron ore received from McLanahan Rockmaster Crusher.

Three 35' logs cleaning 400 to 500 tons of sand and gravel per hour.



### INDUSTRY NEWS

(Continued from preceding page)

#### Acquires Materials Firm

THE DEARBORN GRAVEL CO. INC., Lawrenceburg, Ind. has been organized following acquisition of the Dearborn Gravel Co., a partnership of Walter G. Decker and William R. Stuard. The successor corporation will continue the operations of sand and gravel, ready-mixed concrete and block production and sale of building materials.

Officers of the new corporation are: Roger H. Slugg, president; Mrs. W. P. Watson, vice-president; David W. Watson, secretary-treasurer; and Frank E. Weismiller Jr., general manager. Walter G. Decker is a director of the corporation. Majority stockholder is The Hamilton Gravel Co., Hamilton, Ohio.

The Dearborn Gravel Co. Inc. has added new equipment to the plant and has made improvements in the transit-mixer fleet.

#### Purchases Plant Site

PERMANENTE CEMENT CO., Oakland, Calif., has purchased 2,200 acres of land near Scholle, N.M., on which options were taken last summer. Engineering is progressing on a new cement plant there, the company's third. Orders have been placed for major equipment and construction may start this spring.

Equipment will include a 12- x 450-ft. rotary kiln with 1,400,000 bbl. annual capacity and two raw and finish grinding mills.

#### Rock Firm Relocates

TRIANGLE ROCK PRODUCTS, INC., San Bernardino, Calif., received approval of county commissioners for moving its facilities to a new location near Lytle Creek. Rock, sand and gravel operations will be installed on land now owned by the company. A zoning variance was granted for construction of rock crushing, concrete batching and asphalt plants.

#### Pavement Yardage

AWARDS OF CONCRETE PAVEMENT for the month of January, 1957, were listed by the Portland Cement Association as follows:

	Sq. yd. awarded during January, 1957
Roads	3,989,803
Streets and alleys	1,674,328
Airports	1,498,871
<b>Total</b>	<b>7,163,002</b>

(Continued on page 70)

# Why do some crushers earn more profit than others?



● There can be several answers to the above question . . . but the most successful producers are generally those who *keep maintenance costs down*.

That, in a nutshell, is why more and more crusher men are switching to Oro Manganese replacement parts. They've found that when crushing surfaces are made from this remarkable metal, they give up to 25% longer service.

There are three reasons.

*First*, by use of several alloy additions, Kensington engineers have succeeded in developing a number of remarkable wear-resistant alloyed manganese steels. These metals actually *fight back* when exposed to wear.

Parts made from Oro KENKROME, for example, have unusual initial hardness, but develop an even

greater *surface hardness* when exposed to impact. But while their surface becomes harder and harder, the metal underneath always remains tough . . . better able to stand the shocks and stresses which shatter less durable metals.

*Second*, Kensington's own scientific process of heat treating gives these metals a structure superior to that of ordinary manganese steels . . . and makes them even better equipped to resist wear.

*Third*, in most instances the original design has been improved. Kensington's Quad-edge, renewable hammer tips offer a good example. This exclusive design provides *four* service edges. In most cases, half the metal can be worn away before replacement is necessary. Hammer shanks may be used over and over again.

The following replacement parts are available in Oro Manganese:

- Jaw and cheek plates (for jaw crushers)
- Roll shells, smooth and corrugated (for roll crushers)
- Mantles, bowl liners (for cone crushers)
- Mantles, concaves (for gyratory crushers)
- Hammers, grates, liners (for pulverizers)
- Shell and end liners, screens (ball, rod, tube mills)
- Cages (impellers) and liners (for disintegrators)

Despite their longer life, *these cost no more than ordinary parts*.

It will take only one trial to prove to you that Oro Manganese is all we claim. There's a great possibility that the coupon below may save you hundreds of dollars.

Mail it today.

## Wear Resisting ORO Manganese Replacement Parts



# Kensington

STEEL COMPANY

KENSINGTON STEEL CO., Dept. R, 505 Kensington Ave., Chicago 28, Ill.  
SUBSIDIARY OF POOR & COMPANY • CHICAGO

☐ Quote Prices ☐ Have Representative Call ☐ Send Literature

Type of Crusher \_\_\_\_\_ Make \_\_\_\_\_

Size \_\_\_\_\_ Casting Part Number \_\_\_\_\_

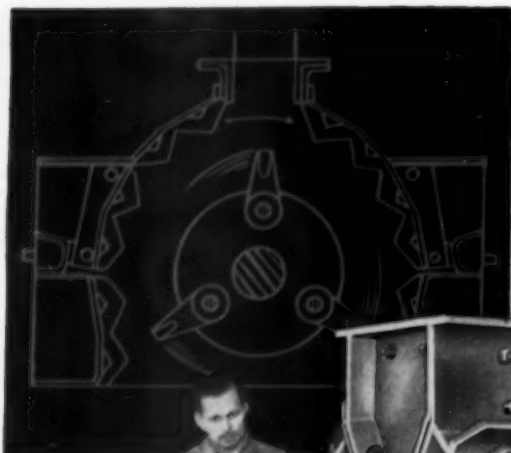
NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

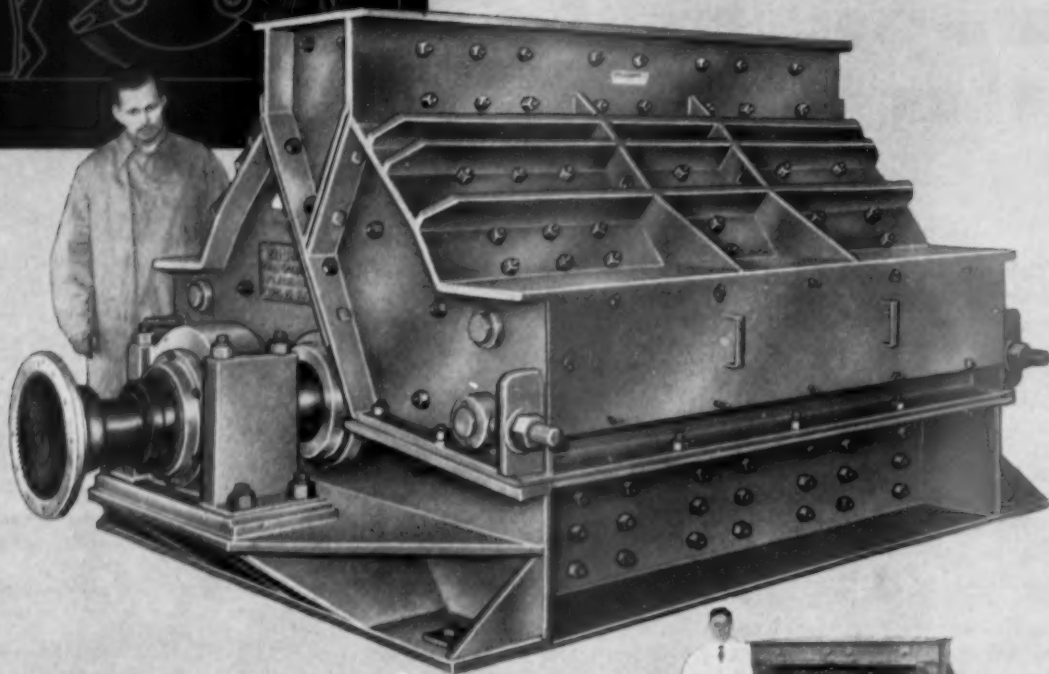
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CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

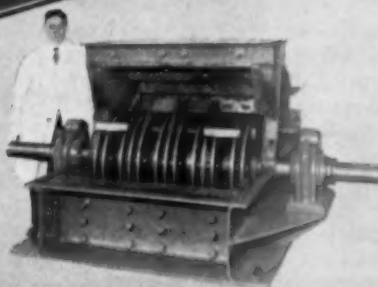
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## **WILLIAMS REVERSIBLE IMPACTOR**



- 100% Impact Reduction
- No Friction Or Abrasion
- Unobstructed Discharge
- Less Upkeep Expense



Internal view showing manganese steel impact blocks, hammers and liners. Rugged, heavy steel plate construction. Extra large shafts are mounted in oversize bearings sealed in self-aligning housings.

### **Unequalled For Secondary Grinding**

Reduces limestone and material of similar hardness to  $1\frac{1}{2}$ ",  $\frac{3}{4}$ " or smaller. Properly adjusted, the Williams Impactor makes excellent material with the proper percentage of fines for road base course. Unusually low upkeep expense as reduction is 100% by impact. Material is fed to enter between the hammers and is thrown against the impact blocks setting up a repeated ricochet action which accomplishes the reduction. Adjustable impact blocks adjust for wear. A reversing

switch on motor permits rotating hammers in either direction, to the left today and to the right tomorrow, thereby giving double hammer life. No grates are used. Entire bottom is open permitting unobstructed discharge of crushed material and less wear and tear. A size for every job. Let us tell you about one for your use.

**WILLIAMS PATENT CRUSHER & PULVERIZER CO.**  
800 ST. LOUIS AVE. St. Louis 6, Mo.



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**WILLIAMS**  
CRUSHERS GRINDERS SHREDDERS  
Oldest and Largest Manufacturers of Hammer Mills in the World

# LIMA

## SHOVELS - DRAGLINES AND CLAMSHELLS

are geared to quarry  
and pit conditions

Down time in digging operations is costly—not only because of difficult on-the-job maintenance—but because down time of machines ties up costly labor and idles other expensive equipment. Lima shovels and draglines, with "built-in" stamina for the tough jobs, pay big dividends by assuring continuous operation with maximum output at lowest cost.

Painstaking care in every step of manufacture assures the quality of every part, long trouble-free service of every Lima machine. You'll be able to put Lima to work and keep it working day in and day out with only routine maintenance.

Get complete details from your nearby LIMA distributor . . . or write Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Lima, Ohio.

**COMPARE QUALITY!** No other machine gives you as much as LIMA!

1. Piston-ring-type dirt seal rings and retainers.
2. Moving parts are flame or induction hardened for longer life.
3. Main machinery is placed well back of center of rotation.
4. Anti-friction bearings at all important bearing points.
5. Big capacity drums and sheaves are easy on cables.
6. Propel and swing gears and power take-off are enclosed in a sealed oil bath.
7. Torque converter (optional on certain types).
8. Wherever you are, you can depend on skilled service and nearby warehouse stocks of parts.

These are only a few of the features which help you *strip more, dig more and load more* with a LIMA. There's a type and size for every job—shovels to 6 yds., cranes to 110 tons and draglines variable. Smaller capacities on rubber.



DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

**LIMA** SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

**BALDWIN-LIMA-HAMILTON**

CONSTRUCTION EQUIPMENT DIVISION — LIMA WORKS

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• Hamilton • Loewy-Hydropress • Madsen • Pelton • Standard Steel Works



# ► 3,000 TONS OF

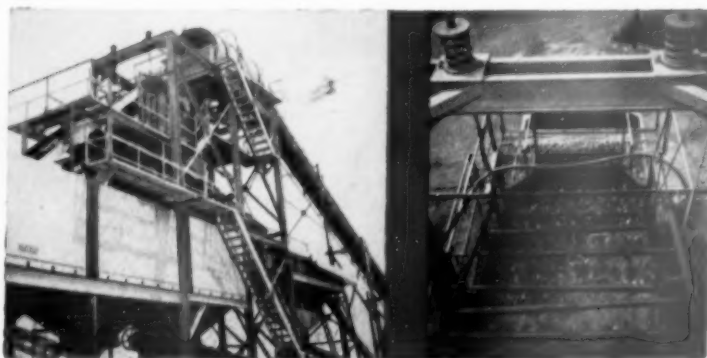
## handled by a SIMPLICITY grizzly feeder at Badger Materials in Indiana

On the Indiana Turnpike, Badger Materials Co. is using a Simplicity Grizzly Feeder to handle 3,000 tons of aggregate a day, some of it well over 16 inches in diameter. This same material is being accurately sized by a Simplicity Simpli-Flo two bearing screen. A smooth operation throughout.



Start of the operation is shown here as a seven-yard truck dumps aggregate into a 25-yard receiving hopper. Feeding from this hopper is a Simplicity 3' x 10' OA-10-A2 Grizzly Feeder. The stone is fed off the grizzly bars and into a large gyratory crusher. The undersized material passes easily through the bars and onto a belt running under the crusher (the belt also receives crushed stone from the crusher). From here the material is fed into a plant which acts as a secondary crusher.

The material then travels up another belt, goes through a washer, and is discharged ... onto a Simplicity 4' x 12" Simpli-Flo, 3-deck screen. Further washing is accomplished by spray bars on the Simpli-Flo, which is suspended by overhead springs and cables. The various sizes of material are dropped into hoppers and hauled away by trucks. Sand and undersized are sluiced off for separation.



# AGGREGATE A DAY

Simplicity Simpli-Flo Screens are two-bearing screens, generally hung by springs and cables from overhead supports. Simpli-Flo screens omit the usual main frame and outboard bearings, thereby offering minimum width for installations where width is a problem. On these double-end drive screens, the eccentric shaft is counter-balanced for efficient true circle operation; bearings are heavy duty eccentric type, protected against dust and water by labyrinth seals; discharge lips are readily accessible; and screen cloth is arranged for easy changing.



The Simplicity Grizzly Feeder combines scalping and feeding in one operation. This unit eliminates the old type arrangement of apron feeder and stationary grizzly. You will gain additional plant room. Your operating and maintenance costs will be cut by 50%. Simplicity Grizzly Feeders use an inertia type drive mechanism, and can produce heavy action, allowing sizes up to 6' x 20' and capacities up to 1,000 tons per hour. They maintain positive and controlled feed rates under the bin . . . bridging of material in the hopper is eliminated.

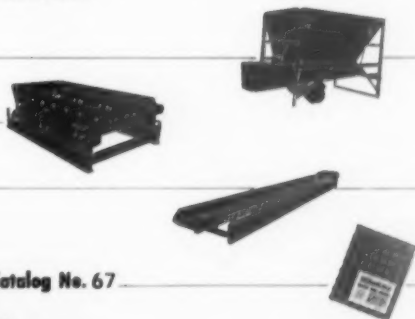
## OTHER SIMPLICITY PRODUCTS INCLUDE:

- Os-A-Veyr Feeders

- Simplicity Gyration Horizontal Screens

- Simplicity 32 Series Balanced Conventional Pan Type Vibrating Conveyors

- Simplicity Woven Wire Screens . . . Send for Catalog No. 67



SALES REPRESENTATIVES IN ALL PARTS OF THE U.S.A.

FOR CANADA: Simplicity Materials Handling Limited, Guelph, Ontario

FOR EXPORT: Brown and Siles, 50 Church St., New York 7, N. Y.



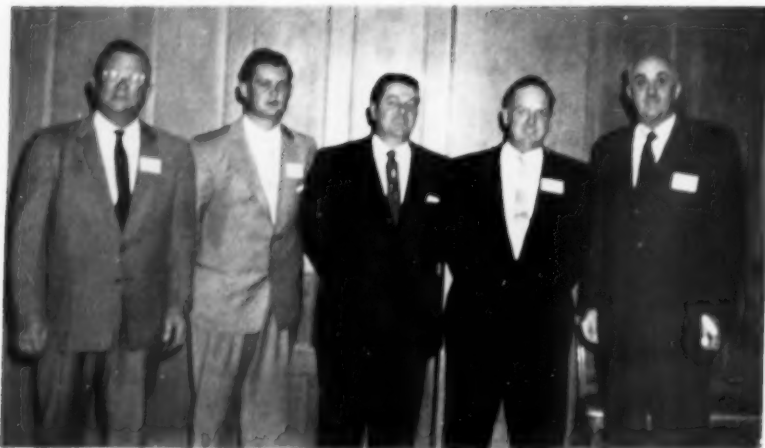
ENGINEERING COMPANY • DURAND 13, MICHIGAN

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ROCK PRODUCTS, April, 1957

## INDUSTRY NEWS

(Continued from page 61)



**Minnesota Agricultural Lime Producers Association** elected new officers, including (left to right) Henry Pederson, director; Dean Gaulke, secretary-treasurer; Donald Stussy, president; Lee Osmundson, vice-president; and Charles Bryan, director

### Ninth Meeting for Minnesota Group

THE MINNESOTA AGRICULTURAL LIME PRODUCERS ASSOCIATION held its ninth annual meeting February 14 and 15, 1957, at the Dyckman Hotel, Minneapolis. Officers elected to head the group during the coming year are: president, Donald Stussy, Stussy Construction Co., Mantorville; vice president, Lee Osmundson, Osmundson Brothers, Adams; secretary-treasurer, Dean Gaulke, Patterson Quarries, St. Charles; directors, Charles Bryan, Bryan Rock Products, Inc., Shakopee, Henry Pederson, Pederson Bros. Harmony, and Virgil Smith, Heintz & Smith, Caledonia.

The outgoing president, Gene Muller, Mankato Aglime & Rock Co., presided during the convention. Featured speaker was Robert M. Koch, president and general manager, National Agricultural Limestone Institute. Mr. Koch reported on recent developments

in Washington concerning the Soil Bank and the Agricultural Conservation Program as they affect the use of agricultural limestone. Later he led a discussion concerning individual producers' specific problems in marketing agricultural limestone.

Merle Avery, administrator of A.C.P. in Minnesota, reported on activities in the state, and answered questions raised by producers. Others on the program were Dr. A. C. Caldwell and Dr. John Grava of the University of Minnesota, who reported on their research work and who discussed the state's agricultural limestone needs.

General discussions followed the informal talks. In the final afternoon session, discussion centered on various operational problems. W. L. Bryan, Bryan Rock Products, Inc., Shakopee, was moderator for each of the discussion sessions.

### Aglime Producers Meet in Wisconsin

WISCONSIN AGLIME PRODUCERS ASSOCIATION held its annual meeting at the Park Hotel, Madison, Wis., February 13, 1957. New officers chosen were: president, W. A. Canary, Footville Lime & Rock Co., Footville; vice-president, Roger Ivey, Ivey Crushing and Construction Co., Mineral Point; secretary-treasurer, Ervin Ellefson, Ellefson Bros., Viroqua; and directors, Michael Brisch, Rockwell Lime Co., Manitowoc, Stanley Buye, Arthur Overgaard Co., Elroy, and Walter Wendt, Dann and Wendt Lime Works, Rio.

The outgoing president, Lester A. Helgesen, Janesville, presided. Much

discussion concerned the efforts of the association to obtain a modification in the Agricultural Conservation Program regulations which, in its opinion, have retarded the use of agricultural limestone.

A committee named by Mr. Helgesen had met with State A.S.C. Committee and with college officials, but made little progress. It was decided to have the new president name another committee to continue these efforts.

A committee consisting of Mr. Canary, Mr. Buye and Robert M. Koch, president and general manager of National Agricultural Limestone Institute,

met with Wisconsin Governor Vernon Thomson to discuss these problems.

Other business discussed at the Wisconsin meeting concerned the research program the organization is helping to finance at the state university.

### Iowa Limestone Men at Meeting

THE IOWA AGRICULTURAL LIMESTONE ASSOCIATION held its 12th annual convention February 20 and 21, 1957, at Hotel Savary, Des Moines. Meetings of the board of directors and committees occupied the first day, with the general meeting called at 9:30 a.m., February 21.

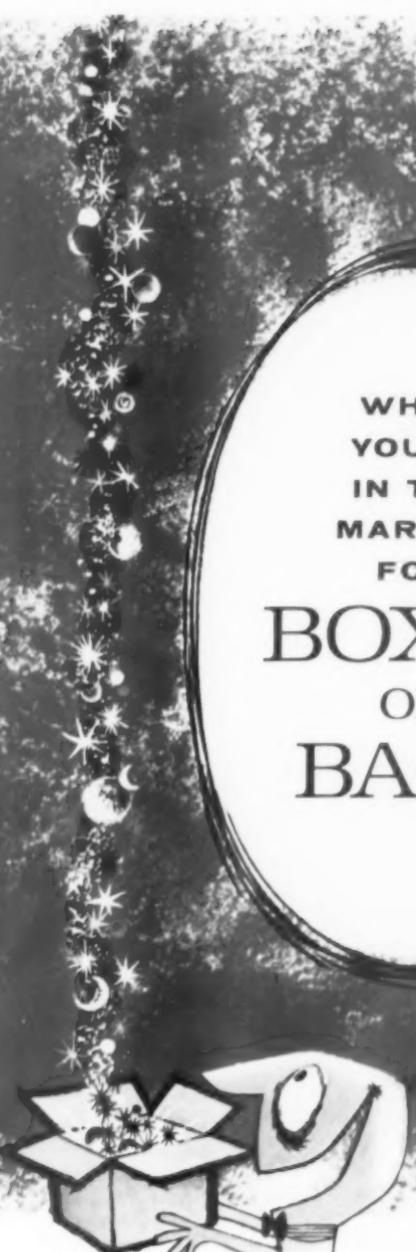
Clint A. Allen, executive secretary, in his annual report remarked upon the success of the billboard advertising program. Some 36 billboards in Iowa and five in adjoining states carry promotional advertising for the sale of agricultural limestone.

Dewey Cornell, program specialist of Iowa State A.S.C. Committee, explained Acreage Reserve and Conservation Reserve as they pertain to the Soil Bank Program. Dr. E. R. Duncan, extension agronomist, Iowa State College, discussed Iowa's need for agricultural limestone. He stated that a college-conducted survey revealed that Iowa needs from 44- to 50,000,000 tons of agricultural limestone now to meet its requirements, and approximately 4,000,000 t.p.y. thereafter to maintain its soils.

Luncheon speakers introduced by President Roy A. Potthoff included Iowa Governor Herschel C. Loveless and Ernie Mehl, feature sports writer of the Kansas City Star. Speakers at the afternoon session were Tom Hippaka, Professor of Industrial Relations, Iowa State College, discussing Americanism, and Vern Schield, limestone producer and president of Schield Bantam Co., Waverly, who told of his recent trip to Russia.

Officers named for the 1957-58 term are: president, Walter A. Schemmer, Schemmer Construction Co., Logan; vice-president, Robert E. Frampton, E. I. Sargent Quarries, Inc., Des Moines; directors, Glenn Moore, Midwest Limestone Co., Gilmore City, Tom L. Robinson, Missouri Valley Limestone Co., Oakland, Dennis Schildberg, Schildberg Construction Co., Greenfield, and Forrest A. Thomas, L. & W. Construction Co., Centerville. Clint A. Allen was reappointed executive secretary treasurer.

(Continued on page 72)



WHEN  
YOU'RE  
IN THE  
MARKET  
FOR  
**BOXES**  
OR  
**BAGS**



IT'S  
**FROSTKRAFT**  **kraft**  
packaging

Gift-wrapped stars? A box full of moons? Well, maybe not.  
But FROSTKRAFT boxes and bags can handle just about  
everything else. Let us help solve your packaging problems.

*Corrugated Containers • Multiwall Shipping Sacks • Standard & Specialty Bags*

FOREST PRODUCTS DIVISION **OLIN MATHIESON CHEMICAL CORPORATION** WEST MONROE, LA.  
FROSTKRAFT IS A TRADE MARK

## INDUSTRY NEWS

(Continued from page 70)

### Purchases Two Plants

CONSUMERS CO., Chicago, Ill., announces the purchase of Milwaukee Limestone Products Co. and Buckley Gravel Co., both located near Franklin, Wis. Harry A. Clark, Consumers Co. president, stated that the acquisition of these properties is part of a continuing program of expansion which included the purchase in 1955 of Lutz Co., Oshkosh, Wis. Other Wisconsin operations are at Racine, Kenosha and Dousman.

Mr. Clark further stated that James Buckley, founder and principal stockholder, will continue his association with the two newly acquired Milwaukee County plants.

### Public Relations Project Features Sand, Gravel

COLORADO SAND AND GRAVEL PRODUCERS ASSOCIATION, Denver, Colo., has prepared for distribution an aerial map of the Denver metropolitan area with an outline of its diminishing gravel resources. The public relations project includes text with the photos which suggests that "temporary sand and gravel districts" be set aside before buildings are erected on the deposits. Following removal of the sand and gravel, the land can be zoned properly, depending on its surroundings. C. G. Cooley is president of the Colorado association and Lloyd S. Brannan is secretary-treasurer.

### Ash Grove Adds Kilns

ASH GROVE LIME AND PORTLAND CEMENT CO., Kansas City, Mo., completed installation of a new kiln at its Louisville, Neb., plant January 1, 1957, bringing the total number of kilns at the plant to seven. Its use is expected to increase capacity by 10 percent, according to Paul Sunderland, board chairman. The 10- x 325-ft. rotary kiln was installed at a cost of \$2 million.

Besides the Louisville expansion, Ash Grove installed a kiln of the same dimensions and new grinding mills at its Chanute, Kan., plant.

### Acquires Sand Deposit

IDEAL SAND & GRAVEL CO., Boise, Idaho, has acquired 40 acres of land adjoining its present plant site. The deposit, averaging 20 ft. deep, contains about 75 percent sand. A Byron Jackson pump produces from 1 to 2 cu. yd. per minute.

According to Oliver L. Gregerson, owner of the company, strategic minerals in this alluvial deposit in the Boise River Basin will be investigated. A prestressed concrete plant is also planned for the site.

### Portland Cement Production

THE PORTLAND CEMENT INDUSTRY produced 25,874,000 bbl. of finished cement during November 1956, as reported by the Bureau of Mines. This was an increase of four percent over November, 1955. Mill shipments totaled 22,705,000 bbl., an increase of five percent, while stocks on hand were 15,975,000 bbl., 37 percent more than on the same date a year ago. Clinker production during November, 1956, amounted to 26,607,000 bbl., an increase of four percent over the November, 1955, figure. The output of finished cement came from 160 plants in 37 states and Puerto Rico. During the same period of 1955, 24,894,000 bbl. of finished cement were produced.

### Intensifies Sales Program

NATIONAL GYPSUM CO., Buffalo, N.Y., has intensified its industrial sales program devoted to products used in manufacturing processes. It also has entered the commercial construction field "in a major way," according to Melvin H. Baker, board chairman. Gypsum, acoustical, asbestos and insulation products now in production will be sold under the new program, Mr. Baker said. Sales forces for acoustical, corrugated asbestos and roof deck products have been combined to form the new Commercial Trade Sales Division, headed by J. W. Duncan.

### Plans Research Unit

HEAVY MINERALS CO., Chattanooga, Tenn., having begun operations at its Chattanooga plant, has approved plans for construction of a research and pilot plant unit there. The research center, estimated to cost \$300,000, will occupy 3,200-sq. ft.

### Leases Quarry from A.E.C.

RALPH ROGERS STONE CO., INC., Bloomington, Ind., has leased 160 acres of dolomite bearing property from the Atomic Energy Commission. The new quarry site is at Oak Ridge, Tenn., near the quarry where Rogers Co. has been in production since 1943. Following clearing and stripping operations, moving of equipment took place during the winter months.

### New Incorporations

FEDERAL SAND AND GRAVEL, INC., Milwaukee, Wis., has been incorporated by Anthony J. Tomka, Cudahy, Wis., and Edward J. Tomka, Greendale, Wis.

KENTUCKY CRUSHED STONE, INC., Paintsville, Ky., with authorized capitalization of \$300,000, has been organized to deal in stone, sand, gravel, coke and wood, as well as coal and mineral lands. Incorporators are Alexander Cameron and Stuart H. Adams.

JOHNSON SAND & GRAVEL, INC., has been formed in West Allis, Wis., with an authorized capital stock of 250 common shares with par value of \$100 each. Incorporation papers were signed by Theodore R. Johnson, Eugene Johnson, and Robert A. Johnson.

### Presents Safety Award

THE NATIONAL SLAG ASSOCIATION Safety Competition, conducted by the Bureau of Mines, U. S. Department of the Interior, awarded highest safety honors for the year 1955 to the Duquesne plant, Duquesne Slag Products Co., Pittsburgh, Penn., and to the Portsmouth plant, Standard Slag Co., New Boston, Ohio.

The Duquesne plant, winner in Group A (60,000 or more man-hours), was operated 140,298 man-hours without a disabling injury. The Portsmouth plant, taking top honors in Group B (less than 60,000 man-hours), was operated 58,986 man-hours without a disabling injury.

### Authorizes Improvements

MARQUETTE CEMENT MANUFACTURING CO., Chicago, Ill., announced approval by its board of directors of expenditures totaling \$5,363,000. The amount will go largely for cost saving installations at Marquette plants in Superior, Ohio, Nashville, Tenn., and Rockmart, Ga. No increases in production capacities are involved.

Marquette President W. A. Wecker has indicated that the company's annual production rate is 3,000,000 bbl., or 22 percent greater than it was a year ago. New plants in Milwaukee, Wis., and Cape Girardeau, Mo., are beginning to produce.

### Gypsum Shipments Down

U. S. DEPARTMENT OF COMMERCE reports that producers of gypsum lath and board shipped about 7.6 billion sq. ft. of these products during 1956. This was a decrease from the record 7.8 billion sq. ft. shipped in 1955.

END



Helical Gears by  
**FALK**

## ...your Best Buy in gears!

In these times of industrial expansion and modernization, Falk Helical Gearing is more than ever the first choice of experienced, economy-minded users of gear-driven equipment.

This increasing preference is the result of proved performance. Falk Helical Gears and Pinions provide *better performance over a longer service life* because they are correctly engineered...their accurately generated teeth have extra depth and extra capacity...gear efficiency, as shown by actual test data, is 98+%...the highest you can buy!

Other superior features include: high reduction ratios which permit use of higher motor speeds for greater efficiency and reduced power costs; maximum resistance against abrasive wear; smooth, helical gear action. All these factors contribute to the long service life of trouble-free operation for which Falk gears are famed the world over.

When expanding or remodeling your production facilities, it pays to remember that the performance of your equipment will not be any better than the performance of the gears that drive it. So, if uninterrupted production is important to you, specify Falk Helical Gears. They're available in sizes up to 18 ft. in diameter...in capacities up to 2000 hp.

Consult any Falk representative—also, write for  
**Engineering Report 6170, "Advantages of Helical Gearing."**

**THE FALK CORPORATION, 3001 W. CANAL ST., MILWAUKEE 1, WIS.**

Representatives in Most Principal Cities

### FALK PRECISION HOBGING MEANS LONGER GEAR LIFE

Pictured below are the Falk single helical gear and pinion recently installed on this 1100 hp mill. In Falk Helical Gears, whether single or double helical, several teeth are in simultaneous contact, thus sharing the load and providing smooth operation and performance which is vastly superior to that of conventional spur gears.

Thanks to an exclusive mechanism incorporated in Falk-designed, Falk-built hobbing machines, tooth spacing errors are reduced to an almost negligible minimum, so that the load division between teeth in contact is at its optimum. As a result, smooth power transmission is assured, thereby prolonging the service life of the gears and associated machines.



**FALK**  
...a good name in industry



HD-21 crawler tractor, 204 net engine hp  
315 scraper, 20 yd heaped, 15 strűck

## **YOU CAN STRIP OVERBURDEN AND RECLAIM LAND PROFITABLY** *with this crawler tractor-scraper team*

There is a marked trend toward reclaiming worked-out pits—and a parallel trend toward the use of Allis-Chalmers crawler tractors and scrapers. Both are examples of wise management.

**Land Reclamation**—already a law in many states—eliminates to a large extent the scarred and worthless landscapes left by abandoned pits and piles of overburden. Properly reclaimed land usually returns far more than the cost of reclamation in higher resale value. Even where pits can be only partially filled, the land may be seeded profitably for pasture.

**Allis-Chalmers HD-21 Crawler Tractor and 315 Scraper** are ideal for this type of operation.

This team is mobile and flexible enough to strip overburden and spread it immediately in a worked-out area of the pit. This eliminates the need of re-handling overburden and of calling in specialized equipment.

Curved and offset cutting edge on the scraper, plus torque converter drive on the tractor, are just two of many features that put this Allis-Chalmers team in a class by itself for this type of work. Let your Allis Chalmers construction machinery dealer give you the details. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

# **ALLIS-CHALMERS**

*Engineering in Action*

## Coming Conventions

April 8-10, 1957—

Autoclave Building Products Association, 51st Annual Convention, Statler-Hilton Hotel, Dallas, Texas

April 12-13, 1957—

Texas Aggregates Association and Texas Ready Mixed Concrete Association, Third Joint Annual Convention, Hotel Galvez, Galveston, Texas.

April 18-19, 1957—

Western Concrete Pipe Association, Annual Spring Meeting, Fresno Hacienda Motel, Fresno, Calif.

April 21-24, 1957—

Colorado School of Mines, Second Annual Symposium on Rock Mechanics, Golden, Colo.

June 6-8, 1957—

National Lime Association, Annual Convention, Broadmoor Hotel, Colorado Springs, Colo.

June 16-21, 1957—

American Society for Testing Materials, 60th Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N.J.

June 23-29, 1957—

International Bureau of Precast Concrete, Second International Congress and Machinery Exposition, Wiesbaden, Germany

July 29-August 2, 1957—

Prestressed Concrete Institute, Third Annual Meeting and World Conference on Prestressed Concrete, Fairmont Hotel, San Francisco, Calif.

END

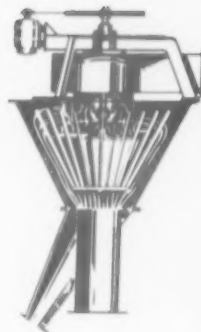
change from...

**40 MESH**

to

**400 MESH**

... in a few minutes, without interrupting operations. Yet any desired mesh may be maintained continuously. Ease of adjustment and close product control are possible with the ...



## "Gyrotor" Air Classifier

The Hardinge Gyrotor Classifier system, combined with a Hardinge grinding mill is an integrated grinding, classifying and product conveying system.

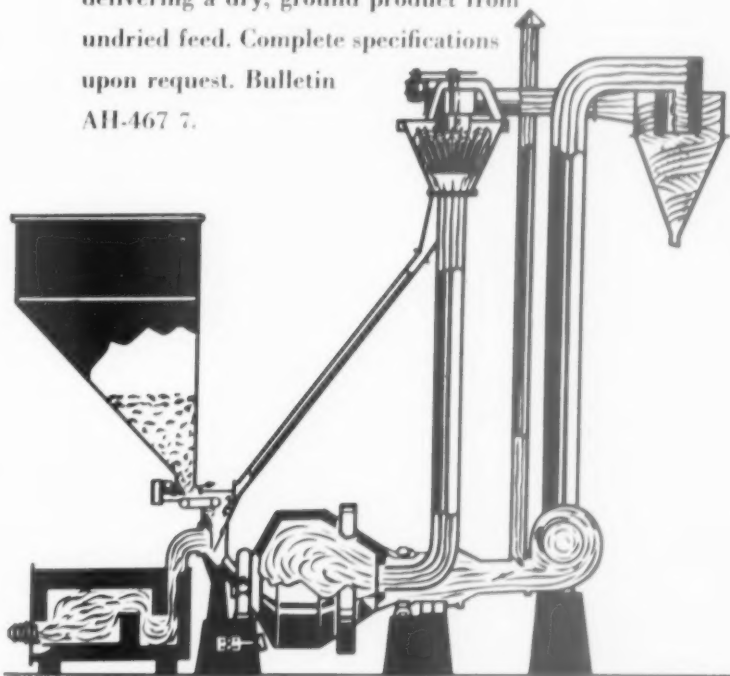
Also available with an air-heating furnace for

delivering a dry, ground product from

undried feed. Complete specifications

upon request. Bulletin

AH-467 7.



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COMPANY, INCORPORATED

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ROCK PRODUCTS, April, 1957

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AGSTONE

## You can depend on RAYMOND EQUIPMENT

BURNT LIME

DOLOMITE

FILLERS

RAYMOND Equipment has served the non-metallic minerals industry for seventy years. Today, the modern Raymond designs shown on this page provide the latest developments in pulverizing and separating machinery for bringing production up to top-level efficiency in the manufacture of fine grades of lime products, and in the direct-firing of powdered coal to rotary kilns.

Roller Mills with flash drying accessories for removing surface moisture while pulverizing . . . Automatic Pulverizers for disintegrating, purifying and classifying hydrated lime . . . Bowl Mills for coal grinding and kiln firing . . . and Whizzer Separators for superfine classification . . . these are advanced types of machines that give automatic, dustless operation with reduced costs of production.

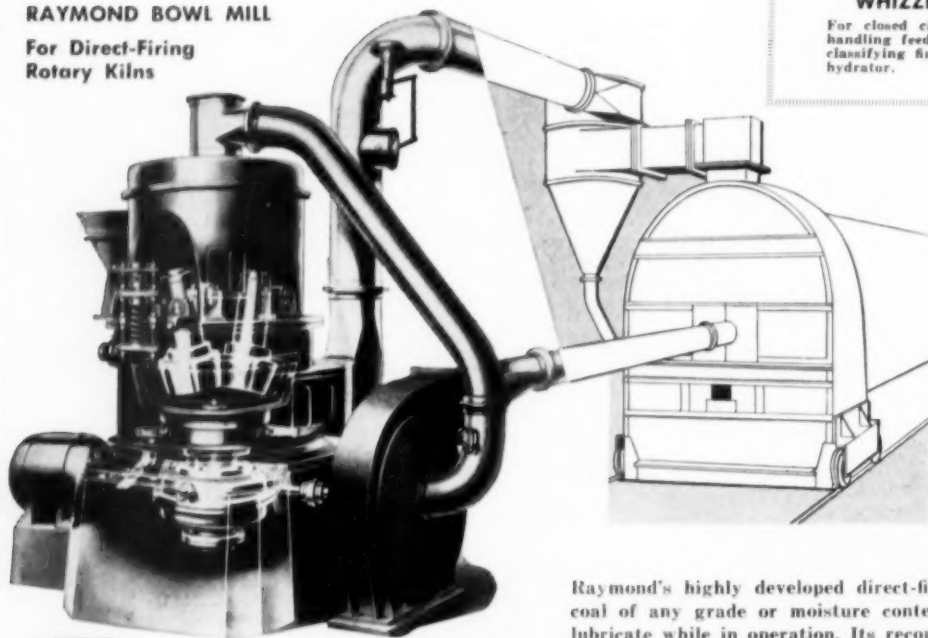


### WHIZZER AIR SEPARATOR

For closed circuit grinding operations in handling feed from the mill . . . also for classifying fine grades of lime direct from hydrator.

### RAYMOND BOWL MILL

For Direct-Firing  
Rotary Kilns



Fully coordinated system of coal pulverizing, and direct firing rotary kilns with panel board control for single or multiple installations.

Raymond's highly developed direct-firing unit for handling coal of any grade or moisture content. Easy to adjust or lubricate while in operation. Its record of economies demonstrated by more than 2000 Bowl Mill installations.



SALES OFFICES IN  
PRINCIPAL CITIES

# COMBUSTION

## RAYMOND DIVISION

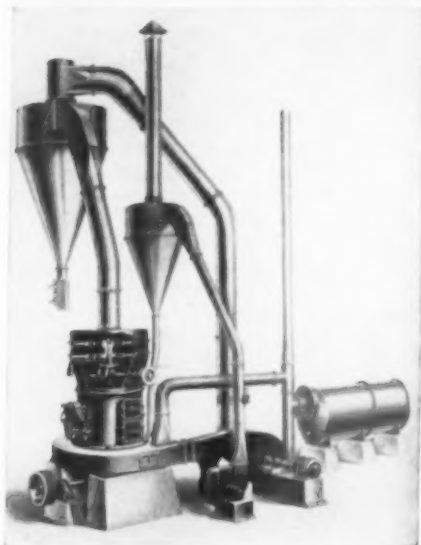
# for producing Quality Lime Materials

SPRAY LIME

MASON'S LIME

HYDRATED LIME

CHEMICAL  
HYDRATE



## FLASH DRYING ROLLER MILL

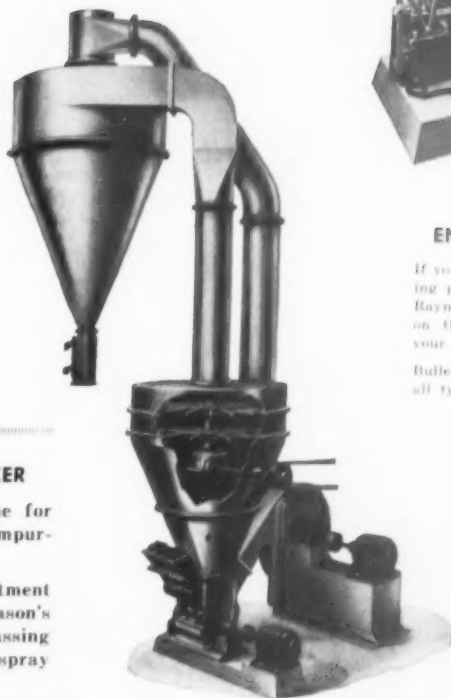
Today's standard equipment for grinding limestone and removing surface moisture in the process. Whizzer separation assures close fineness control, ease of adjustment and high capacity.

Available in a full range of sizes up to Super Roller Mills for handling 30 tons or more per hour of finished material.

## WHIZZER IMP MILL

A compact type hammer mill with whizzer separation.

Useful for a great variety of operations: disintegrating, blending, classifying. Especially suited for handling lime materials and producing fine, uniform, finished products.



## RAYMOND AUTOMATIC PULVERIZER

It is the universally recognized machine for disintegrating, classifying and rejecting impurities from hydrated lime.

It produces all grades by a simple adjustment of the whizzer separator, including mason's lime with finenesses of about 95% passing 100-mesh up to chemical hydrate and spray lime testing 99.9% minus 325-mesh.

## ENGINEERING SERVICE

If you have a pulverizing or separating problem in lime production . . . Raymond engineers can advise you on the proper equipment to meet your needs.

Bulletins and Catalogs available on all types of Raymond equipment.



# ENGINEERING, Inc.

1307 NORTH BRANCH STREET • CHICAGO 22, ILLINOIS  
Combustion Engineering-Superheater Ltd., Montreal, Canada

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ROCK PRODUCTS, April, 1957

77

# HINTS AND HELPS

Profit-making ideas developed by operating men

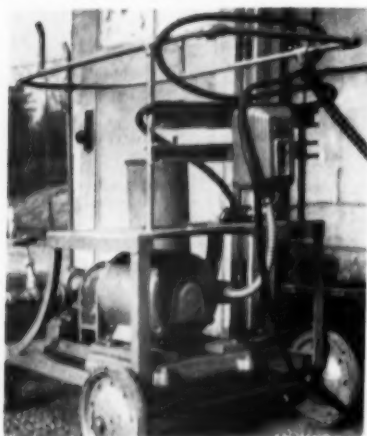
## Dewatering Screen Ahead of Heavy Media Plant



MORE ADEQUATE DEWATERING of gravel going to a belt conveyor ahead of a heavy media separation plant or for immediate use of the aggregate in a ready-mixed concrete plant is often advantageous. The so called "Buzzer"

screen can be used for this purpose. The one shown in the illustration is a 3- x 8-ft. Pioneer single-deck unit, tucked in a small space over the off-bearing belt conveyor and receives its feed from an Eagle washing screw.

## Portable Oil Pump and Filter Recondition Waste Oil



THE PROBLEM OF DISPOSING of large quantities of waste oil each year as it was collected from the transformer shops and automotive equipment pits

was solved when someone suggested reconditioning and adapting the oil to use as a fuel. Not having storage space for the pump and filter assembly in the boiler room of the plant, the rig was equipped with wheels from a boy's discarded coaster wagon. This mobile feature permits storing the outfit in the warehouse during periods of idleness.

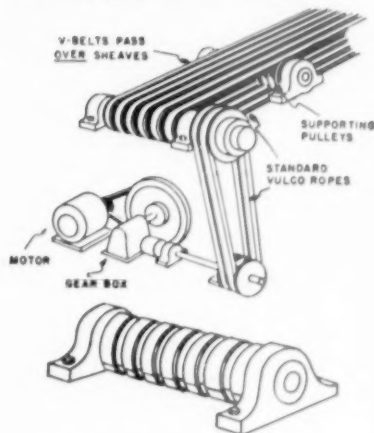
The ¼-hp. motor is a single phase 230-volt job that is powered by utilizing the two "hot" legs of the boiler plant's three-wire, single phase lighting service. The motor is wound to produce 1,750 rpm. and is connected direct to the centrifugal pump by a flexible coupling. The valve pictured is in the suction side of the pump and the hose associated with the valve connects to truck mounted transport tank as deliveries are made.

The frame of this conglomerate as-

sembly is made of various odds and ends of angle plate and a bit of ½-in. dia. conduit bent to form an appropriate frame. The fused starter switch is mounted on two sections of Unistrut welded across upright members of the conduit. The cord is a three-wire unit with the third wire used as an equipment ground wire for protection against electrical shock when the pump is run in days of inclement weather.

The filter case contains a series of finely perforated disks interspersed by wafers of absorbent filter paper. The combination of the two filter mediums strains out all the solids in the form of grit and sludge, plus practically all the entrained moisture in the oil. Filter papers are renewed weekly to insure effective operation.

## Conveyor Problems



V-BELTS ARE OFTEN the most practical answer to conveyor problems. Remarkably trouble-free, the conveyor shown was designed with six V-belts to operate at a speed of 4 ft. per minute. The supports under the belts are particularly important in the design of V-belt conveyors. Depending largely on the kind of material to be conveyed and the spacing of the material on the conveyor, support can be provided in three ways:

1. Grooved supporting idlers. These provide guidance for belts. For larger

(Continued on page 82)

# "We cut drilling costs with TIMKEN® carbide insert bits"

... Reports Fisher Contracting Company

**CARBIDE INSERT?  
OR  
MULTI-USE?**



**LOCATION —**  
Park County, Colorado

**OPERATING CONDITIONS —**  
Granite and porphyry

**D**RILLING through extremely hard and abrasive granite and porphyry, Fisher Contracting Company found that they got the lowest cost per foot-of-hole with Timken® carbide insert bits. Excellent footage and maximum regrinds per bit helped achieve overall economy.

But carbide bits may not always be most advantageous. For extremely deep holes, small diameter blast holes, and constant-gauge holes, carbide insert bits give big economies.

In ordinary ground, however, when full increments of steel can be drilled, and with correct and controlled bit reconditioning, Timken multi-use bits give you the lowest cost per foot-of-hole.

When you use Timken multi-use and carbide insert bits, your drillers save time. Dozens of different bits fit the same drill steel. You can change bits as drilling conditions change; but you use the same drill steel. And the special shoulder union of Timken bits increases bit life because it protects threads from drilling impacts.

Timken rock bits are made from the Timken Company's own electric furnace fine alloy steel. No other rock bit manufacturer goes this extra step to assure you of the highest quality. Why not let us help you select the best bit type for your drilling jobs? Write: The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

# TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

your best bet for the  
best bit for every job



Timken threaded  
multi-use rock bit



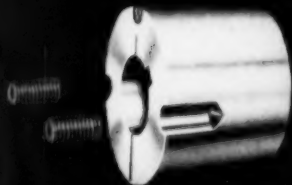
Timken threaded  
carbide insert rock bit

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**IT'S TAPER-LOCK**



**- IT'S INTERCHANGEABLE!**



**TAPER-LOCK SHEAVES**



**TAPER-LOCK SPROCKETS**



**TAPER-LOCK COUPLINGS**  
Rigid — Flexible — Chain



**TAPER-LOCK STEEL  
CONVEYOR PULLEYS**



## The New Way to Cut Costs

Save time in mounting. Cut down-time on production machines. Standardize with Taper-Lock, the *interchangeable* bushing. The same Taper-Lock bushing fits sheaves, sprockets, couplings, conveyor pulleys. That means smaller inventories of power transmission parts. And it means quicker changes when necessary to keep production lines running!

Taper-Lock bushings are available in a range of sizes which makes it easy to change from one size shaft to another. Taper-Lock products slip onto the shaft quickly — hold with the firmness of a shrunk-on fit—come off easily, without shock to bearings or machinery. You'll profit by standardizing on Taper-Lock.

**DODGE MANUFACTURING CORPORATION**  
2600 Union Street Mishawaka, Indiana

**DODGE**

of Mishawaka, Ind.

**CALL THE TRANSMISSIONEER**, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new methods. Look for his name under "Power Transmission Machinery" in the yellow pages of your classified telephone directory — or write us.



# The **Euclid TC-12** gives you more work-ability than other Crawlers



The first really new tractor concept in years...  
with **ALL** the performance features you've wanted

Euclid's Model TC-12 Twin-Power Crawler establishes an entirely new standard of tractor performance. It's built to deliver unequalled drawbar horsepower, easy operation and a smooth, steady flow of power to meet any job requirement. It provides easy accessibility of all major components and all lubrication, check and adjustment points are located for maximum convenience. Unitized assemblies permit service or removal without a major tear-down of other parts.

Powered by two 194 h.p. engines at rated speed, 365 h.p. is delivered to the power

train. Each of the tracks is driven independently through separate Torqmatic Drives giving the TC-12 faster, easier steering and greater drawbar pull at higher speed. There's no clutch—shifting from one of the three speed ranges to another is done under full power—top speed in forward or reverse is 8.3 mph.

Have your Euclid dealer give you all the facts on the TC-12—compare with your present big tractor equipment and you'll know why so many owners have proved that *Euclids are your best investment.*

EUCLID DIVISION, GENERAL MOTORS CORPORATION, Cleveland 17, Ohio

## **Euclid Equipment**

FOR MOVING EARTH, ROCK, COAL AND ORE



## HINTS AND HELPS

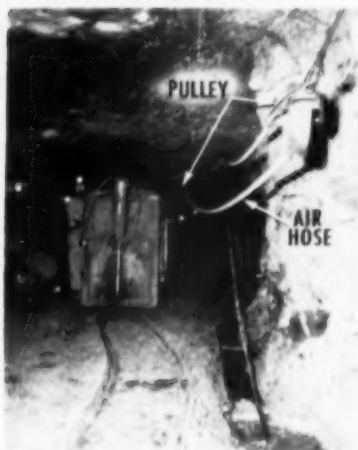
(Continued from page 78)

objects they should be spaced at intervals under the belts not greater than half the length of the objects to be conveyed so that the item will be supported by two idlers at all times. The grooves of idlers should be shallow and should have an angle equal to the belt angle with the belt straight.

2. Flat supporting rollers. These can be used when the guiding action of a groove is not required. These should also be spaced at intervals not greater than half the object length.

3. Flat smooth surfaces. These should be used when full support of the V-belts is required along the length of the conveyor. Smooth, polished hardwood, such as maple, makes a good surface. Steel and brass surfaces also may be used.

### Air-Hose Pulley System



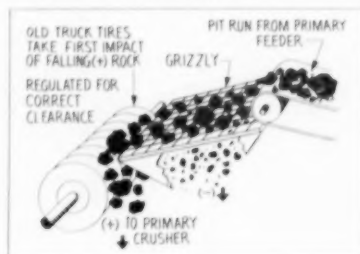
THE ILLUSTRATION SHOWS a pulley system to keep the air hose which supplies power to a larry car from trailing on the ground. This speeds up the operation of the larry car since the operator doesn't have to worry about running over the hose. In addition, placing the hose as shown in the illustration also prolongs its life.

### Truck Ballast

IN THE TIMBER AND SAWMILL sections of the Northwest where depletion of our forest resources means that logs are hauled from remote sections to the sawmills fully loaded trucks often have to go downhill and empty trucks uphill. These operators, to get traction for the return trip, simply load the trailer on the flat deck of the main truck. This added weight gives the truck the needed traction for the return trip. A western industrial

mineral operator, however, uses a large piece of precast concrete as a ballast material to provide added weight over the rear drive wheels of the Kenworth trucks used. The road grades negotiated by the truck are steep, narrow and twisty and the return uphill trip is with empty units.

### Old Tires Take Impact of Gravel to Crusher



AT A RELATIVELY NEW SAND AND GRAVEL PLANT in southern California, pit run material is delivered on a 42-in. belt conveyor to a 3240 Cedarapids jaw crusher. Material from the belt falls to a grizzly where fines are removed ahead of the crusher. The oversize going to the crusher impinges on old truck tires mounted in a row on a shaft placed at right angle to the long axis of the belt conveyor. The cascading material loses some of the energy of impact by first hitting the tires thereby protecting the crusher from excessive wear. Tires are free to move individually on the shaft.

### Drag Scraper Power Unit Mounted on Skid Timbers



POWER UNITS FOR DRAG SCRAPER units at a sand and gravel plant in the western part of the country are enclosed and mounted on skid timbers. Thus the machinery can be moved about the pit whenever a

### Bus Used As Office



OLD RETIRED STREET CARS and railroad coaches have been pressed into service as offices by quite a few rock products producers. If we are going to have portable plants, the office can likewise be portable, for auto junk yards are full of old used buses that with a little interior remodeling will make an adequate office. On one trip in the deep South we observed two offices of the type shown in the illustration. One had its wheels removed.

### Jeep Used In Mountains

A WESTERN SAND PRODUCER operates a sand plant in a rather mountainous area. The deposit is at a much higher elevation than the plant and the road connecting the two is in a loose, deep and fine sand. An ordinary car or truck could hardly get started in such an interplant road system so these operators use a jeep that seems to go into impossible places. Incidentally, the operator carries a pair of field glasses as auxiliary equipment so he can see what is going on at the plant when he is at the mine.



change of location is necessary, and the machinery is protected from rainy weather. Scrapers are 2-yd. and 4-yd. units, each with its drive mounted on enclosed skid units.

Note in the illustration the tremendous distance the scraper travels. The scrapers deliver to a small pit under which are individual reclaiming belts and the two belts deliver to a small surge pile. The gathering belt serving the plant is located under this surge pile.

END

# "WE'RE TURNING OUT THE FINEST MATERIAL IN TEXAS!"

## ... Plant Is Operating Beautifully!"

Says Bill Boerhem, Production Manager of Wesco Materials Corp., Dallas, Texas, Whose New Circle No. 1 Plant Is Their Second to be Equipped With **EAGLE** Washing-Classifying-Dehydrating Equipment!

Yes, when a successful firm like Wesco installs a second round of **Eagle Equipment** at a new plant you can be sure they are right and that the equipment is right.

The Eagle Complete Washing-Classifying-Dehydrating Section at Wesco's Circle #1 Plant consists of a 20' Water Scalping-Classifying Tank with power-operated bleeder valves and triple compartment collecting-blending flume, a 36" dia. x 25' Double Screw Fine Material Washer-Classifier-Dehydrator and a 36" dia. x 25' Single Screw unit, producing concrete sand and mason sand. A 36" dia. x 30' Log Washer processes gravel for specification aggregate. Output averages 2500 yds. per day.

46% of Eagle installations are re-orders by satisfied customers. Plan your first installation today! Reap the benefit of Eagle's field experience and specialized engineering services.

EXPERIENCE, PROGRESS, SERVICE, SINCE 1872

## EAGLE IRON WORKS

137 HOLCOMB AVE., DES MOINES, IOWA



ROCK PRODUCTS, April, 1957

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**GRIND  
AND CRUSH . . .  
AGAIN AND AGAIN  
AND AGAIN . . .  
WITH**

*Carbex*

Triple-forged, steel  
grinding balls . . . Here  
is low cost grinding  
media with maximum  
efficiency . . . Carbex Balls  
are round and stay  
round assuring  
uniform wear.

Write today for prices . . .  
All sizes— $\frac{1}{2}$ " to 5"  
carried in stock for  
immediate shipment.

CS97-2



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**COATES**

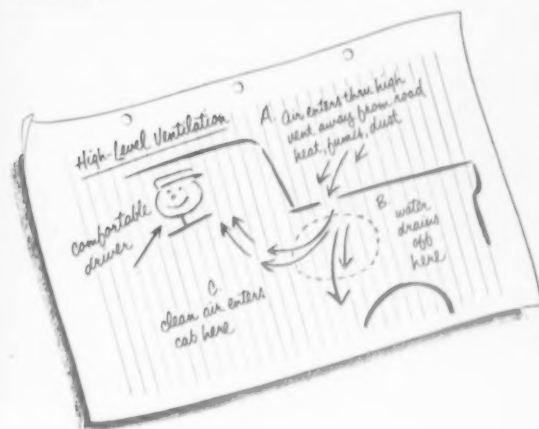
**STEEL PRODUCTS CO.**

**GREENVILLE, ILLINOIS**

**LARGEST EXCLUSIVE MANUFACTURER OF GRINDING MEDIA**



in a Chevy cab,  
even the  
air is better!



**...more evidence that Chevrolet Task-Force Trucks are engineered better and built better for bigger savings!**

*These cab features give you extra comfort and safety behind the wheel, extra savings on truck maintenance. And they're proof that the most modern trucks for your money are Chevrolets!*

The drawing "doodled" above shows how Chevy's High-Level ventilation provides a comfortable interior . . . and the numbers in the big picture point out other advantages equally as good to have around you when you haul! They include:

**1** A roof that's specially built for safer, more comfortable hauling. Sturdy all-steel construction adds to safety; roof's unique inner reinforcement insulates the overhead against heat.

**2** A gleaming, durable baked enamel outside finish. Here's the reason your Chevy's exterior will resist wear better, look like new longer! This handsome finish is available in a wide variety of colors.

**3** A Nu-Flex seat that beats the bumps! Deep-comfort coil springs, metered air shock damping and 3-way adjustment let you take it easy on tough jobs!

**4** A cab that's rustproofed to last! Doors and similar surfaces are rustproofed on the inside as well as on the outside by immersion.

**5** Concealed Safety Steps for convenience. Inside each cab door, they give you firmer footing, make entering or leaving the cab easier and safer.

**6** An undercoated floor, cowl side panels and fender flanges. Virtually all exposed surfaces on the underside of the cab are protected by an anti-rust coating.

**7** A non-glare instrument panel to make driving safer! The textured finish on upper portion of Chevy's instrument panel reduces blinding sun reflections, minimizes eyestrain.

**8** A reliable 2-speed electric windshield wiper\* on each side. Powered by electricity, their action remains constant under all conditions.

Such advantages as these (we've shown only a few) combine to make everything better in a 1957 Chevrolet truck! You'll see for yourself when you visit your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

\*Standard in Series 5-6-7-8-9-10000 models.

**... biggest sellers because they're the biggest savers!**

**CHEVROLET**

**CHEVROLET TASK-FORCE 57 TRUCKS**

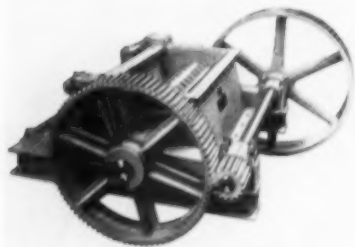
ROCK PRODUCTS, April, 1957

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# NEW MACHINERY

## Intermediate Crusher



MCLANAHAN AND STONE CORP., Hollidaysburg, Penn., has introduced the Super Black Diamond, an intermediate-duty crusher. The fabricated steel unit is produced with a 24-in. roll diameter in seven widths from 24- to 60-in. Recommended by the company for crushing such materials as shale, gypsum, etc., the unit is equipped with a Steelstrut toggle which automatically protects it from damage by uncrush-

able materials. Construction features include cut steel gears, split bronze bearings, removable crushing plate and steel segment rolls. Bolt-on type segments of high carbon steel are standard; but hook-on rock-type segments of high carbon or chrome-manganese steel also are available.

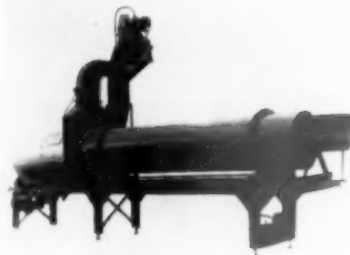
Enter 300 on Reader Card

## Torque Converter

TWIN DISC CLUTCH CO., Hydraulic Division, Rockford, Ill., has announced a new 1300 Series single-stage torque converter designed for high-speed diesel and gasoline engines, producing from 30 hp. at 1450 r.p.m. to 212 hp. at 3200 r.p.m. Specific torque ratings are 165, 200, 240, 285 and 330 lb.-ft. Production currently consists of one model—"F." This is a spacer-type arrangement with an SAE No. 2 engine flywheel housing size and an SAE No. 2 or 3 output housing.

Enter 301 on Reader Card

## Rotary Dryers

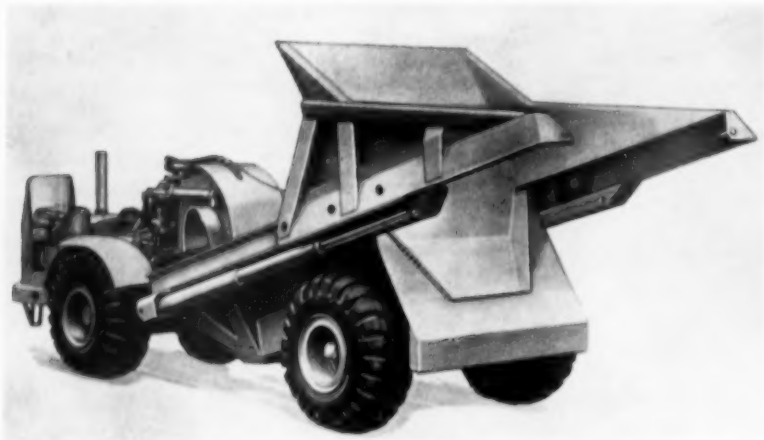


CARPCO MANUFACTURING, INC., P.O. Box 3272, Jacksonville, Fla., is introducing Dual-Flow rotary dryers in two models: RD1020 and RD1430. Capacity (rated on silica sand with 10-percent moisture) is one and two tons, respectively, per hour of bone-dry product. When used on heavy mineral sand concentrates (about 80 percent heavy minerals) at 10-percent moisture, slightly higher capacities are said to be achieved. The dryers feature a concentric fire-tube design, causing the gases to travel the complete length of the dryer before contacting the feed.

All dryers are finished with oil burner, primary air blower, automatic temperature control, indicating pyrometer, exhaust blower, dust cyclone, positive displacement feeder and gear motor drive.

Enter 303 on Reader Card

## Rear Ejecting Trailer Is Tractor-Mounted



ATHEY PRODUCTS CORP., 5631 W. 65th St., Chicago 38, Ill., announces Model PE21, hydraulically controlled trailer with ejection force of up to 200,000 lb. The 31-ton capacity trailer was developed to handle three applications—clean dumping of sticky materials, complete ejection control for spreading the load, and "partial load"

ejection into less-than-trailer capacity sized hoppers or crushers. The PE21 is powered by the Caterpillar DW21 tractor. A tractor-mounted hydraulic pump, operated from the rear power take-off, furnishes power to two hydraulic rams mounted on the sides of the trailer, which move the ejector.

Enter 302 on Reader Card

## Vibration Analyzers

INTERNATIONAL RESEARCH & DEVELOPMENT CORP., 797 Thomas Lane, Columbus, Ohio, has brought out Models 300 and 400 vibration analyzers. The units are designed to measure, troubleshoot and "balance out" vibrations caused by rotating parts and assemblies. Model 300 is intended primarily for "in place" and production balancing, and Model 400 incorporates features for analyzing or troubleshooting as well as balancing. The analyzers also can be used as quality control devices, checking permissible vibration tolerances on products and equipment.

Enter 304 on Reader Card

(Continued on page 200)



**Model  
80-D**

2½ yd. Capacity



# Every NORTHWEST a ROCK Shovel!

Here again you see *more* installations of Northwests in rock. Every Northwest is a *real* Rock Shovel because Northwests bring you the advantages that *make* a real Rock Shovel.

The Northwest Dual Independent Crowd that utilizes force most independent crowd shovels waste, the "Feather-Touch" Clutch Control, the Cushion Clutch, Northwest design and construction and other Northwest features all combine to give high output in tough digging. And, if you have a *real* Rock Shovel you never have to worry about output in *any* kind of digging.

**NORTHWEST ENGINEERING COMPANY**  
1515 Field Building, 135 South LaSalle Street, Chicago 3, Illinois



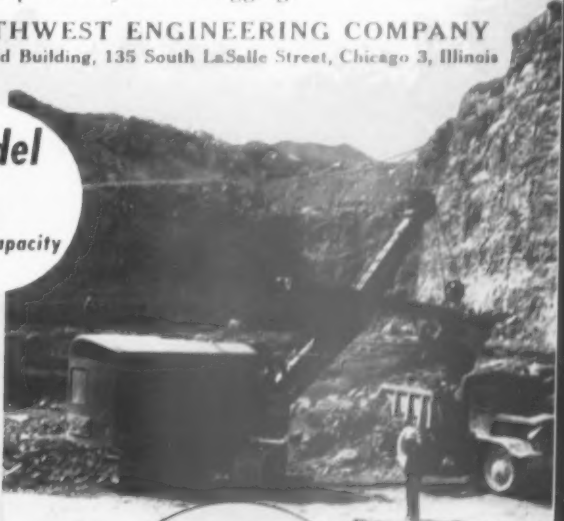
**Model  
41**

1 yd. Capacity



**Model  
6**

1½ yd. Capacity



**Model  
25**

¾ yd. Capacity



# NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

THE GREATEST  
COMBINATION OF  
PROVED ADVANTAGES  
EVER BUILT INTO  
A SHOVEL, CRANE,  
DRAGLINE OR  
PULLSHOVEL



# **A public relations**

How—and why—to develop a good public relations program for your company



# program

By JOSEPH N. BELL

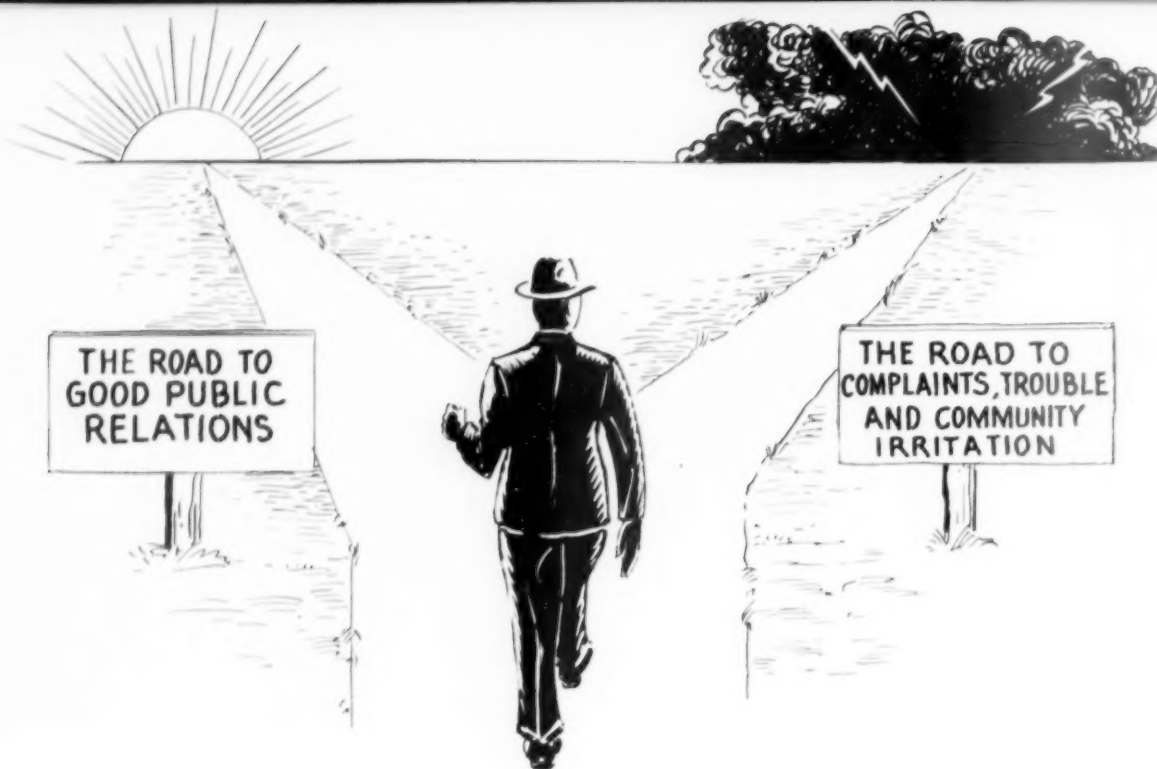
**A** LARGE MAJORITY of the rock products industries are consistently closing their eyes to a great, persistent and growing need—the need to be understood. Call it public relations or what you will, the need is the same and it is acute. Rock products industries are repeatedly taking it on the chin from citizens' groups, zoning boards, local newspapers, state legislators and many other official and quasi-official groups. The answer to this problem is not to complain loud and long over injustice in the hope that the original case of difficulty will be drowned in the salvo. Rather the answer is to operate clearly in the public interest, then let the public know about it in no uncertain terms. Until the industry realizes this, its members will certainly continue to find themselves in hot water.

Examples can be found everywhere. A cement company was unwanted in a community where it might have contributed much simply because it refused to deal openly and frankly with the public as far as the facts of life in cement manufacturing

operations are concerned. A group of sand and gravel operators so incensed local citizens (who understood nothing of the problems involved) while building a toll road that a citizens' group mobilized public opinion solidly against them, making it difficult for them to operate at all. In case after case, stringent zoning restrictions are being thrust upon rock products operators primarily because those doing the thrusting haven't the vaguest understanding of the importance of or the problems faced by the rock products industries.

The day of hiding corporate heads in the sand on the foolish premise that nobody will see what is left above ground is over. Such a day never was really here at all, but rock products operators once got away with this philosophy because communications were poor between citizens of a community, state or nation. This is no longer true. To suppose that people don't know what is going on—and won't pass the word to other citizens elsewhere—is to insult their intelligence. And this is no way to get ahead in the business world, 1957.

It's high time that the rock products industries



## Which road for you?

### Public relations

*Continued . . .*

faced up to some very basic facts about their operations. For example:

1. Sand and gravel excavations are not beauty spots. They are ugly holes in the ground.
2. Cement dust is obnoxious and irritating.
3. Sand and gravel, crushed stone and ready-mix trucks are large, cumbersome, often unsightly, hard to pass, and contribute nothing constructive to the streets over which they operate.

**These are simply a few facts of life.** To assume that the citizens of the community in which you operate aren't aware of them is to assume that these citizens are complete idiots—which they are not. However—and much more to the point—(1) these are but relatively minor irritations in an industry which offers a great deal more on the positive side; and (2) extensive efforts are now underway to eliminate or at least ameliorate these drawbacks.

Unless these sources of complaint are brought out into the open and discussed freely with your neighbors, it is difficult or impossible to sell yourself in the community because your neighbors not only don't understand you but don't trust you, either. Every operator must face up to the truism

that the public knows very little about his problems and probably cares less—except as it affects each individual very personally. If you were a bank robber or a crooked politician, such anonymity would be desirable. But as an important and respected businessman in the community, it isn't desirable at all. The public can't understand your problems if they know nothing about them. And the time to get this understanding across is **before** the public gets its dander up. Then your point of view will be given full and adequate consideration. You can't expect desirable laws or public sympathy from a community that knows nothing of the advantages to them of your business operations. And, in explaining them, you can't insult the intelligence of citizens by ignoring your shortcomings. Admit them, then explain what you're doing about them. Only in this way can you get on a sound footing with the public.

Unhappily, rock products makes up one of the last industries to become aware of these facts—and it's beginning to hurt badly in some quarters. But it's certainly not too late to do something about it—with a concerted, planned and enlightened program of public education. Where the damage has already been done, such a program may at least be able to save some of the pieces. And where there is no serious trouble yet, such a program may avert it completely.

ROCK PRODUCTS offers below a suggested blueprint for a public relations program for members of the rock products industries. Naturally



"Company vehicles advertise the company"

such a program, to be effective, would vary somewhat from town to town and company to company. But we will try to point out here a few of the basic requirements. It will then be up to you to adapt them to your company or your community.

#### I. Administration of a public relations program

Ideally of course, such a program should be administered by a trained and experienced public relations director of the company, working with an advertising or public relations agency. Relatively few companies in the rock products field can afford such a set-up. Short of this, a full-time public relations man is the next best bet. In smaller companies, the public relations function can be handled as a split duty of the advertising or sales manager. And in a very small company, the owner himself should perform this function. However it is administered, several important points should be observed:

1. The program of public relations should be the direct responsibility of **one individual**.
2. It should be a planned program, carefully budgeted, worked out and put into operation and not a hit-and-miss catch-all affair.
3. The man in charge of public relations should sit in on policy-making decisions and should have a voice in them; he should not be asked simply to bail the company out of trouble after it has gotten in hot water through its own bumbling policies.
4. It should be clearly understood that **everyone** in the company is responsible for good public relations; one of the most important jobs of the public relations man is to make them aware of this. One other important source of help is often available in the administration of public relations problems. Oftentimes, groups of operators can band together to hire a public relations specialist to help tell their story to the public. Thus the services of local, regional and national organizations which

employ public relations professionals is often available in some form or another to the small local operator. Most large manufacturers who supply equipment to people in the rock products field will also lend public relations support. The Koppers Co., for example, offers the services of a public relations practitioner to customers to help them explain to the citizens of their community the benefits of a newly installed dust collector.

#### II. Employee relations

Public relations implies the existence of one mass public. However, the concept of good public relations can be much better understood if it is considered in the light of a number of important and different publics. Probably the most important public of all is comprised of the employees of a company. Unless they are sold on company operations and are willing to sell the company outside, it is difficult to mount an effective public relations program. Selling outsiders on the value of a company that is consistently knocked by its employees is an almost impossible job. On the other hand, a company whose employees are constantly acting as good-will ambassadors usually enjoys commensurate public confidence.

No amount of gimmicks will sell an employee on his company. This relationship must be established on the solid foundation of satisfactory wages, working conditions as desirable as they can be made, and—most important of all—a sincere and healthy interest on the part of company officials in the well-being, satisfaction and happiness of the people who make up the company. Once this rapport is established, here are a few suggested activities which may help to gain the maximum benefit for the company from such widespread good feeling:

1. Meetings of all employees should be held periodically so that everyone can be made aware

*Please turn to page 148*

There's quite a bit of confusion, need for much education, promotion and a better understanding of procedures

# Conservation

## how they are viewed

**A** SURVEY AMONG PROMINENT AGRONOMISTS points up an increasing need for agricultural limestone on farms. The government A.C.P. program has helped, and the new Soil Bank program is designed to help. But there remains much to do in translating desire and intent into beneficial action.

Today, even though these two major government conservation programs are working to assist the farmer in maintaining and improving the growing power of his land, only a little more than one-fifth of the annual requirements in agricultural limestone is being used. Why?

There are many answers. Some say it is the construction of the government programs themselves, others say it is mis-interpretation of the original intent of Congress. There are those who blame it on improper administration of the programs that are most difficult to administer in the first place. "We just don't understand it," say others. Farmers, who use the limestone, are blamed for disinterest in the programs, just plain laziness, lack of knowledge on what they can or can't do or a wish not to become entangled in "red tape."

For the most part, though, agronomists believe that confusion about the programs can be overcome by simple but effective education, followed by good promotion by all concerned. That, they believe, will get the job done in conformance with the original intent and purpose of the laws.

Administration practices with reference to the programs need revamping in spots, say the agronomists. Many suggestions for improvement were submitted. Experience this past year shows that a greater proportion of A.C.P. allocated funds is being spent—less is being returned. Successes this past year are believed to be due in great part to promotion and cooperation between producers, government agencies and farmers.

The mandatory soil testing provision of A.C.P. has come in for a lot of discussion. Producers have made the point that the provision has hindered the distribution of agricultural limestone. Agronomists didn't discuss that point too much, but all favored the test amendment. They firmly believe that, to accomplish the purposes of A.C.P., soil testing is by far the best method that can be used to scientifically raise the land to proper production efficiency.

An  
across-the-desk  
report

# programs-- by agronomists

There is perfect agreement among agronomists on the question of benefits from education, advertising and promotion to increase limestone use on the farms. They compliment producers for the great strides they have made in the recent past. But they say that much more is needed.

The Soil Bank program came into effect only this last year, and there is still much activity on Congressional Hill in getting the program squared away. As reported last year, just before the Soil Bank program passed Congress, most agronomists thought the program would provide a considerable market for agricultural limestone. They still think that way, but with some reservations. Only one expressed a contrary opinion. The program is new, and the consensus is that it is not yet understood. Since changes still are being made, we will have to wait for final action and begin a thorough educational program.

**Will A.C.P. administration changes help?** Complexity of the A.C.P. program and its administration naturally have resulted in a myriad of problems, some of which have not been solved. Due to these unsolved problems, not enough farmers

are participating in the program—not enough agricultural limestone is being spread to raise land to the desired production efficiency. Agronomists across the nation were asked for suggestions on improvement of program administration that would help the cause. There were many.

It is believed desirable to reduce to a minimum all federal and state regulations relative to credit for lime as a soil building practice. "Keep the practice of requirements as simple as possible," they say. There is the problem of getting more farmers to participate in A.C.P. "I think that discontinuing the farm-to-farm visits of the local committeemen decreased the number of participants in the program," said one.

The need for education on the program itself had nearly unanimous backing. One stated pointedly that understanding of the A.C.P. itself should be improved. Another urged an increase in the educational work among farmers, to show them how to use A.C.P.

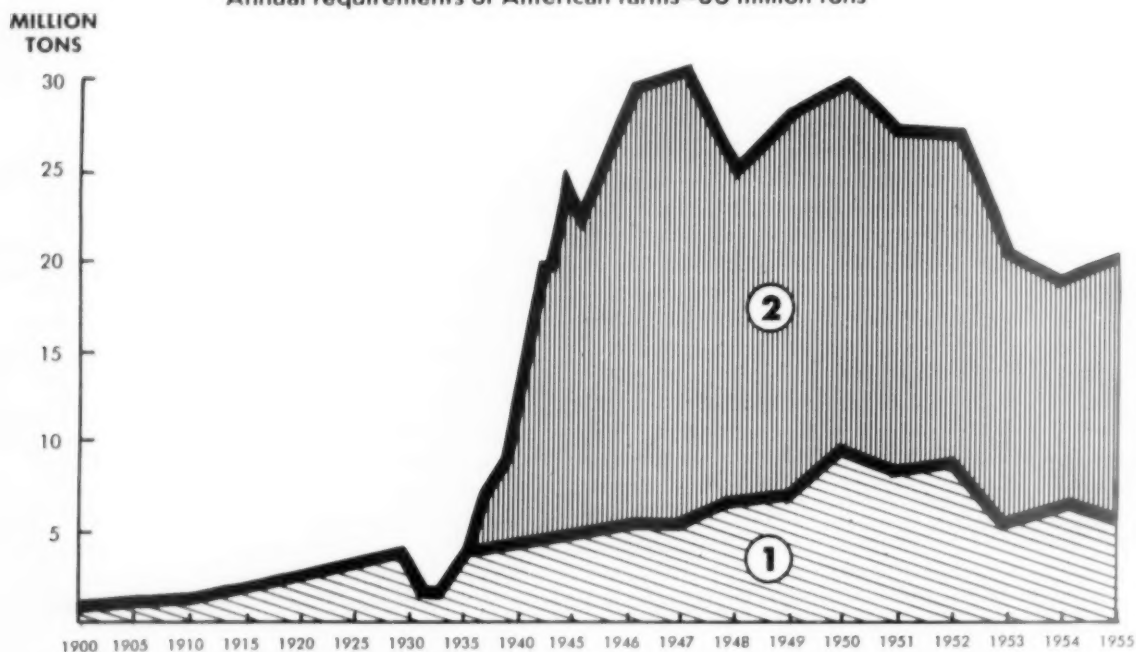
Here's what a southeastern agronomist had to say: "Increasing numbers of farmers will participate in A.C.P. when adequate educational pro-

*Please turn to page 118*

"The Conservation Reserve  
Program is falling down..."

# The soil bank means to the

Agricultural limestone used annually in the United States  
Annual requirements of American farms—80 million tons



1. LIME PURCHASED ENTIRELY BY FARMERS.

2. LIME PURCHASED WITH ASSISTANCE PROVIDED BY AGRICULTURAL CONSERVATION PROGRAM.

NALI—March, 1957

An  
across-the-desk  
report

# program—what it ag-lime industry

By ROBERT M. KOCH\*

**A** LITTLE MORE THAN A YEAR AGO the term "Soil Bank" was coined by the newspapers to describe the government's new farm bill. The program, described as a new approach to our farm problems, was passed by Congress and signed by the President. Over one billion dollars was allocated to implement it. The name implied that the emphasis for this program was to be on saving the soil.

We have had national conservation programs since the early '30s. The agricultural limestone industry has participated and has had its growth stimulated by federal assistance to farmers to improve their soil. But we do not believe that the Soil Bank program is doing its job, and we intend to raise questions about it with Congress.

The Agricultural Conservation Program has been in effect since 1936. Although the basic Soil Conservation and Domestic Allotment Act authorized \$500 million for its activities, in recent years much less than this amount has been appropriated. It is currently \$250 million a year and, as recently as 1954, concerted efforts were made by several groups to eliminate or drastically reduce it.

Growth of the agricultural limestone industry indicated on the accompanying chart was stimulated by the amount authorized for the Agricultural Conservation Program. Therefore, when the figure of \$1.2 billion was appropriated for the Soil Bank, we felt that here was an opportunity to expand the use of agricultural limestone.

Agronomic authorities at our state agricultural colleges have said that the nation's farmers should use 80 million tons of agricultural limestone a year to maintain the soil of this nation in proper fertility. We believed that the Soil Bank program would help us to reach this goal.

As finally passed by Congress the Soil Bank was divided into two parts, the Acreage Reserve Program and the Conservation Reserve Program. The Acreage Reserve Program was allocated \$750 million and applies only to those farmers who have an acreage allotment in any of the six basic crops—corn, wheat, cotton, tobacco, peanuts and rice. These farmers have only to reduce their acreage allotments for these crops by a certain amount to receive their payments. Land that is idle under this arrangement may or may not have a conser-

*Please turn to page 146*

\*President and general manager of N.A.L.I.

Monday morning quarterbacking

# Ag-lime: Why isn't more



By B. T. ABBOTT

Mr. Abbott, probably one of the best trained men in the country to speak on this subject, is owner of the Southern States Soil Service. He has been associated with the agricultural field for many years and is an Agronomy graduate from the University of Illinois. Mr. Abbott is presently a member of the American Society of Farm Managers and Rural Appraisers and is past president of the Tennessee Society of Farm Managers and Rural Appraisers.

**I**N MY HALF CENTURY ASSOCIATION with agricultural limestone I have developed some rather strong opinions regarding the industry as a whole. There have been many changes in that time toward more efficient production and distribution. At the same time, there has been a dearth of the special kind of promotion needed to bring the real value of agricultural limestone home to American agriculture.

It certainly is not necessary to do more experimental work to prove its worth. The land grant colleges have compiled an astounding array of information on limestone as it has been used on

many types of soil and with many different crops. They all tell the story of soil improvement, better aeration, improved bacterial action, greater plant food efficiency, larger crop yields, and more net profit. They report in dollars and cents the increased value accruing from the use of limestone, not only for a single year, but for some years after its application.

With all of these favorable factors, why the lag in its use? To my mind there are a number of reasons, and all play a part in the overall picture. At the turn of the century some large companies pro-

An  
across-the-desk  
report

# of it used?

ducing building and road material were beset with an accumulation of "fines." Since agricultural colleges were reporting that limestone could be used profitably, they decided to sell them to the farmers. Not much was known about fineness, and some of these early cars were really composites of the quarry. You older men know that was true. At that time there was no adequate distributing machinery. I remember only too well unloading a car of limestone on a dump plank, hauling a couple of miles to the field with a team of horses, dumping it on the ground and then distributing as best we could with a shovel. That was doing it the hard way. But there was another side to that picture. That material was bought and paid for by some man who was really sold on improving his position. There was no government help. He applied the limestone because he believed in it.

Between 1910 and 1914 enough interest had been created that small neighborhood quarries were being opened, sometimes by an individual, sometimes by a group of neighbors who put up enough money to get a small crusher. One of the men supplied the power, and the other men did the work of getting out material for the group. This too was doing it the hard way, as the time used for this job was during the hottest summer months just before harvest season.

Agricultural limestone was quite a business in the twenties. Various universities had put out cir-

culars showing how the farmers could make "do-it-yourself" distributors that would handle agricultural limestone, and manufacturers began putting out machinery for this work. Then came the depression years. The sale of ag-lime was low.

To help the farmer keep up morale as well as to improve soil conditions, the U. S. Department of Agriculture set up a program which permitted those farmers interested to get just about all the limestone they wanted free. This program is reflected in the great tonnage of limestone that was shipped, and there still are piles of undisturbed limestone scattered throughout the country to remind us of those days. They are out in fields overgrown with grass—monuments to ignorance.

Later, when the government decided to pay only half of the cost, the use of limestone dropped as though it was testing the law of gravity. Now, with the need for increasing the use of limestone to preserve our agriculture, we are using about a quarter of what is needed each year for crop withdrawals and leaching. This would mean about 80 million tons per year if we were adequate in application, as against 20 to 24 million tons now used.

**To my mind there is but one answer—education.** I mean this in its fullest sense. As I see it, there is a great job to be done by all segments of the industry; that goes for the producers, the distributors, the U.S.D.A., our colleges and extension

## Ag-lime

Continued . . .

### Why not subscribe to a fund to be used specifically for the promotion of agricultural limestone? The results should be well worth the expanded effort

forces and the users. I would be the first to admit there is no easy answer to the problem in every section of the country, but I am just as certain that if they could work together, much good would be accomplished.

The farmers ask you men who produce limestone, "Why should I use any more limestone than I can get with government assistance? I want to make money. I must make a profit or I cannot stay in business. I don't know about these profits of which you and the experiment stations speak. The results were not obtained on my place or on the lands of one of my neighbors. How do I know? I've never seen a sign that told of a limestone demonstration in my neighborhood."

The farmers ask the distributors, "Mr. Distributor, when you accept a commission to deliver limestone, how do you go about it? Is it just a case of getting through with the job, getting a check, and getting gone? I would like to know. What can you tell me about various types of agricultural limestone? Do you know, or are you just following the book?"

They also query their Farm Bureau Agent, "Mr. Extension Man, what do you know about putting out limestone? I want to do it right. When, where and how do I do it? Why can't you tell me, in simple terms, what I want to know? I don't understand Base Exchange, pH, p.p.m. and other terms you use. Are they good or bad? I don't know. Why should I use dolomite instead of calcium carbonate stone? Do I use limestone for correcting acidity or is it for plant food?"

**These questions and many more** are asked every day. They must be answered in an understanding way.

Another phase of the limestone problem lies within the authority of the state Agricultural Stabilization and Conservation office. In a recent

study of the agricultural limestone situation in a number of our southern states, in answer to the question, "What fineness or grade is required?", there was a great variety in answers—from 100 percent through a ten mesh screen, to 80 percent through a ten mesh screen, to 50 percent through a ten mesh screen to no state requirement. Why not some uniformity?

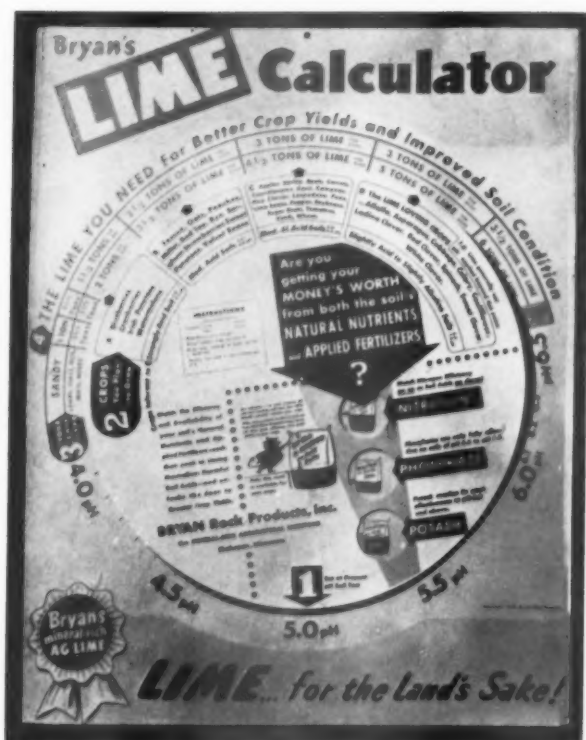
On this particular point I feel the limestone interests should concentrate and by working with the proper authorities come up with one common answer. At the present time material acceptable in one state will not qualify in another.

One of the great changes in our agriculture during the past ten years has been the increased use of all plant foods and particularly of commercial nitrogen. Though it has meant greater plant growth, larger yields and greater plant food withdrawals, nitrogen has created a real problem as it relates to the efficiency of fertilizer in increasingly acid soils. This is recognized by some of our agricultural leaders, but there are still too many content to go along with the old order.

In a recent statement in "Plant Food Review," Mr. Russell Coleman, executive vice-president of the National Plant Food Institute, had this to say. "On one point, all the experts agree. **We must expand our educational programs.** This applies not only to the agricultural colleges and the Federal Government, but to the lime and fertilizer industries. Their responsibility is twofold: to support and supplement the programs of the public agencies, and to step up their own educational and promotional activities." To that I say, Amen.

**What are you going to do** about the cooperation between limestone and fertilizer? The value of fertilizer is well known to all, and limestone needs the support. I would suggest a demonstration on as

*Please turn to page 156*



## An across-the-desk report

This calculator is one of the most effective methods we've seen of convincing a customer that he needs ag-lime

# Unique guide helps sell lime

By CHARLES S. BRYAN\*

IT HAS LONG BEEN OUR BELIEF that the slow acceptance of ag-lime by farmers is an educational problem. We knew that if a farmer had a thorough knowledge of what agricultural limestone would do for him on acid soil or on a soil deficient in calcium or magnesium, he would beg or borrow enough money to get it. We also knew that many in the agricultural field besides the farmers were not fully aware of the close connection between the effectiveness of applied fertilizer and the pH (relative acidity) of the soil.

An advertising man with whom we discussed this suggested that we make up a chart showing the relationship between the workings of fertilizer and the acidity of the soil, and indicating the amount of lime needed for each pH factor. Our lime calculator is the result of this suggestion.

In devising it, our advertising man worked very closely with Dr. William Martin, head of the soils department of the University of Minnesota, with the professors under him, and with Dr. Grava, the

agronomist in charge of the soil testing laboratory. He also consulted those in charge of the lime department of the Agricultural Stabilization and Conservation Office for Minnesota, to get their ideas and approval. These men were all very happy to cooperate, since they realized that the lime calculator definitely had an educational value.

Our calculator is a cardboard square with a revolving disc attached in the center. On the square, around the bottom edge of the circle, are pH factors from 4.0 to 6.5. At the top edge is a chart of the necessary lime tonnage per acre needed for both sandy and non-sandy soil, ranging from one to six tons. The rates were recommended by the University of Minnesota department of soils.

The disc itself has four classifications of crops listed along the top, grouped according to their tolerance to acid soil. Behind the disc are drawings of bags of fertilizer which show the degree of effectiveness attainable with various pH factors.

Please turn to page 185

\*Bryan Rock Products, Inc.





A portable scaffold is necessary to support the vacuum drill in rough terrain

# There's something **NEW** in drilling

**Vacuum drilling is faster, more efficient than the jackhammer in certain drilling operations**

**V**ACUUM DRILLING may replace the old jackhammer in Western Lime Products Company's open pit mining operation near Santa Susana, Calif. where they have been working under tremendous difficulties. This operation of a calcium carbonate open pit mine, some 55 miles from Los Angeles, offers many problems to the plant and processing operation as well as the excavation and mining of material.

"Oyster Shell" is the general name given to the material Western Lime Company is mining, and it has a specific gravity of 2.62 and rates 3 on the hardness scale. The stratas are badly broken with a great deal of fissured formation. The ledges and out croppings have been folded in and at some places run at from 45 to 60 deg. angles to each other in various patterns. In some areas complete fossil oyster shells are recovered intact. The terrain is very steep and rocky, and drilling of this material to any depth is almost impossible.

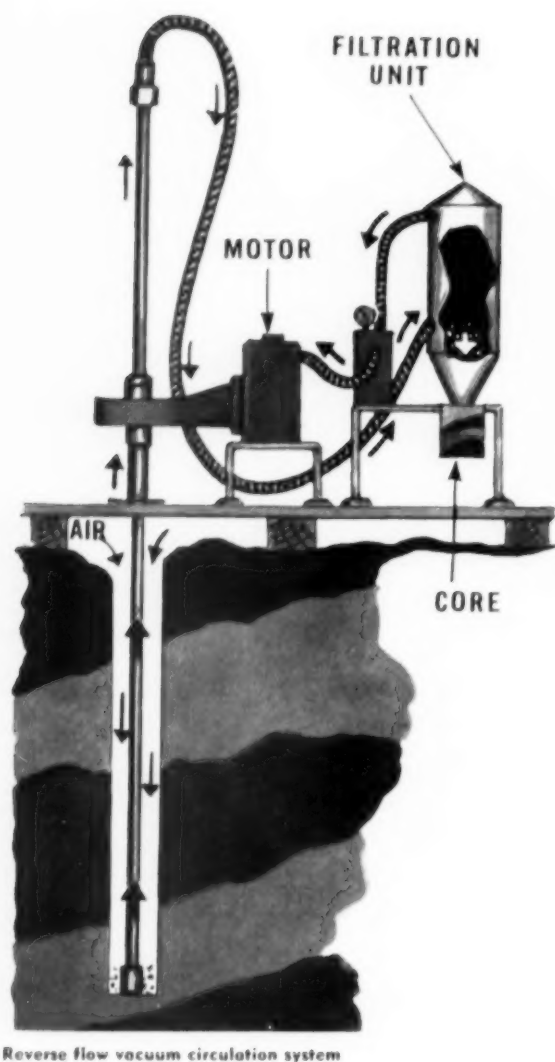
The company's need for expansion into these shell deposits has long been imperative. But this

difficult formation made any exploration and reconnaissance drilling costly and retarded part of the expansion program.

Blast holes have been unsatisfactory because of their inability to penetrate deeper than 8 ft. in this broken formation. This operation then results in drilling an 8 ft. blast hole, packing and blowing the 8 ft., then moving the debris and repeating the same drilling and blasting operation. The company records show this to be an impractical operation to recover small deposits of the calcium carbonate material.

Mr. J. C. Gillibrand, superintendent for Western Lime, and drilling foreman G. R. Pape conducted a survey to determine if a new type of drill or drilling solution could be used in exploration and production drilling for the calcium carbonate material.

Jackhammer drilling would not circulate cuttings deeper than 8 ft. because of the loss of air circulation into the crevices and broken fissures which resulted in the sticking of the drill steel.



Reverse flow vacuum circulation system

## Something new in drilling

*Continued . . .*

The rough terrain made wagon drilling too large and too expensive an operation. The inaccessibility of water meant rotary mud drilling would be too expensive in transporting water to the remote areas. They concluded that a new type of drilling method must be used and that it should meet certain qualifications. First, the drill must be able to penetrate deformed seams without the loss of circulation. Secondly, the drill must be portable for the rough terrain and the pattern drilling method of outlining deposits, and thirdly, the drill must be a dry operation because of the lack of wa-



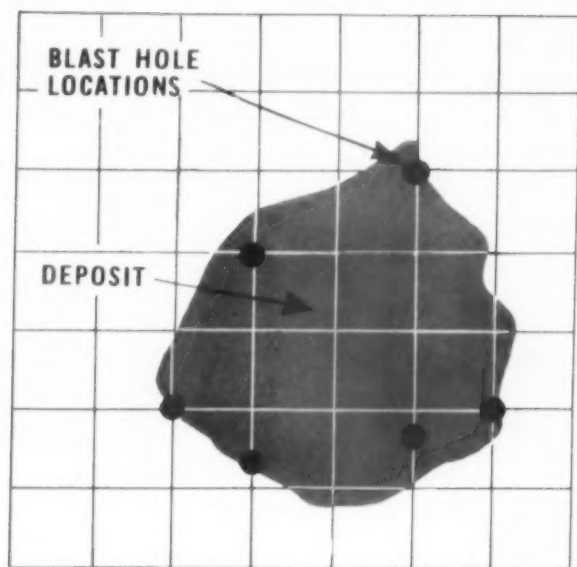
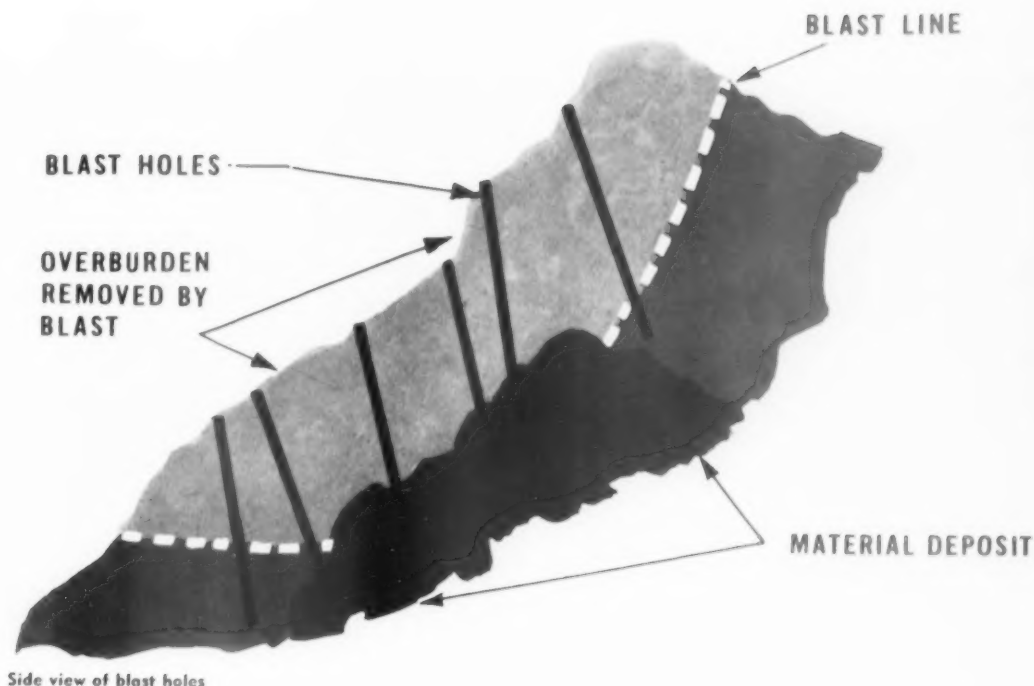
Closeup of the vacuum drilling rig

ter in the area. Finally, the drill must be able to penetrate the formation to the desired depth for analysis, assay and blast hole drilling at a reasonable rate of speed.

Mr. Gillibrand contacted the Houston Tool Company of Santa Susana, Calif., manufacturers of vacuum drilling equipment. A great deal of time was spent evaluating and demonstrating various phases of this new type of drilling and circulation system. They turned in a report to Western Lime favoring this new vacuum drilling equipment on an experimental basis, to determine its applicability to their need.

This is a compact rotary drilling system weighing only 125 lb. which removes all cuttings from the hole by vacuum. The Mighty Midget is a portable vacuum rig which is easily carried by two men. This facilitates its use in rough terrain impossible to reach by truck or car. The unit is quick to set up and the rotary table can be swiveled to drill at any angle, vertical or horizontal. High velocity air cools the bit and lifts the cuttings internally through the drill stem by reverse circulation. Cuttings are separated from the exhaust air and are deposited in a transparent glass container in the order they are removed, furnishing a visible core sample easily correlated to depth.

The vacuum system requires no water. It insures against the loss of circulation as the air is drawn up through the inside of the drill stem and free air enters down the annulus. Thus there is no



Graph of pattern drilling

possibility of contaminating the core. The Mighty Midget drills a 1 $\frac{3}{4}$ -in. hole up to 100 ft. in depth in dry formation. The drilling rig and the core recovery unit weight is only about 62 $\frac{1}{2}$  lbs. each.

Upon arrival at the Western Lime Co. quarry, the drill was packed to the location to first determine the percentage of shell deposit. The area to start the new open pit operation was outlined by pattern drilling. The drill was most desirable for this first step since it recovered 100 percent of all cuttings by the flow of air through the drill stem. Depths of 30 to 40 ft. were obtained with great speed. By drilling several test holes it was quickly determined where the highest percentage of deposits lay and the depth of the overburden which must be removed.

The pattern drilling outlined and defined for the company where the new location would be. All cuttings were recovered and catalogued for analysis, and an estimate was made of probable mining profit.

After the deposit area had been established and because of the rough terrain a portable scaffold was built and set up on a large dump truck and moved to the side of the hill. This was to make a level platform for easy operation and to allow several blast holes to be drilled from the same location. Most bulldozer work, necessary in the old air compressor and jackhammer method, was

*Please turn to page 188*



**Gathering of the raw material** is shown here. Dredge pumps direct to the sump at the right. Dragline moves material to surge pile over tunnel. Conveyor belt moves material to top of plant.

# **River dredging**

## **brings a thriving**

## Alabama Gravel Co. carries on sand and gravel operation in city's back yard

**T**HOUGH IT IS WORKING almost in the back yard of Montgomery, Alabama, this sand and gravel firm gets no complaints from the neighbors—it operates a dredge in the Alabama River. The Alabama Gravel Company is currently the only plant getting material from the river in the area, and is doing a thriving business selling specification sand and gravel for construction work in Alabama, Georgia and Florida, as well as in the vicinity of Montgomery. This plant also ships its fluxing gravel for metallurgical work as far away as Tennessee, as it runs plus 99 percent silica.

The company constructed a \$125,000 wash-screen plant, which went into production when dredging first started on July 5, 1956. It was designed by R. E. Burgess, vice president, and Jesse Waters, engineer, for McCullough Industries, and fabricated and constructed by T. D. Kelley Company. Both firms are of Birmingham.

The operation was started by a company-owned dredge, the *Chickasaw*, with a cutter head, which operated off-shore near the plant site. This dredge stockpiled several thousand tons of material before erection of the processing plant was completed, guaranteeing an adequate stock of material while the plant was building. But when the wash-screen plant went into production, it was found that the dredging and pumping capacity of the dredge was so huge that too much lay-by time resulted. The dredge was transferred to another company location in Florida.

The McCullough and Kelley firms designed and built a complete new dredge in two weeks at the plant site—an achievement many in the Montgomery area believed impossible. It is estimated that the dredging system would cost approximately \$100,000 to replace.

The new dredge is named *T. D. Kelley* and is now pumping from an estimated potential dredging area of 20 million cu. yds. of high quality sand and gravel. Now close by the wash-screen plant, the *T. D. Kelley* will work up and down river. Pumping from sand bars above the surface, it will work to depths of approximately 35 ft.

The dredge hull is approximately 100 ft. long, and 35 ft. wide and 6 ft. high with a 14-ft. super-

By ED LONDON

# business



Alabama Gravel Co. dredge "T. D. Kelley" pumps to sump 50 ft. above water level. Pipe line in foreground carries clean river water to wash plant

## River dredging

*Continued . . .*

structure. It now uses a 12-in. Thomas "LL" suction pump, made in Birmingham, Ala., powered by a 350-hp. Allis-Chalmers motor. The dredge is pumping 1,000 tons of sand and gravel per 8-hr. day with a two-man operating crew aboard.

A 16-in. pump will be installed later as the dredge moves either up or down stream so that production can be handled as the pipe line lengthens. If the going gets too tough for the pump to handle alone, a cutter head will be installed.

Currently, this is a suction pump operation exclusively, sand and gravel is pumped ashore directly to the plant stockpile. Production is at the rate of 250-tph. through 1,200 ft. of 12-in. pipe line, to a 30- x 40-ft. sump on the river bank about 50 ft. above water level. Overflow water from the sump returns by gravity to the river. The sump was constructed by driving 30-ft. sheet steel piling.

A No. 1201 Lima dragline swinging a 2-cu. yd. Blaw-Knox clam shell bucket on a 60-ft. boom, transfers the raw material from the sump to a 1500-ton capacity surge pile, and also builds up the 5,000-ton storage area nearby.

The partially dewatered sand and gravel from the surge pile passes by gravity into a reclaiming tunnel. This feeds to a 160-ft. company-built 24-in. belt conveyor which elevates material to the top of

the stationary washing and screening plant at the rate of 350 tph.

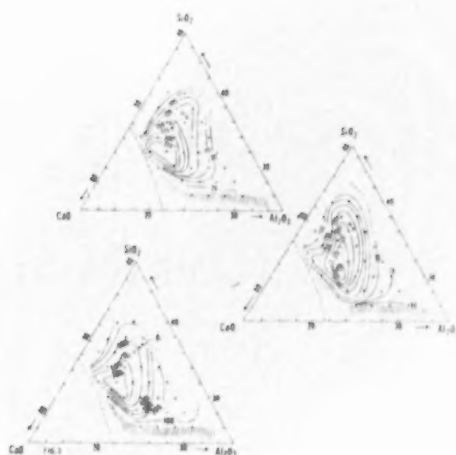
No crushing is involved. Separation of the basic products—sand, and gravel ranging from  $\frac{1}{4}$  to 2 in.—is performed by a Pioneer 5 x 14-ft., three-deck primary vibrating screen, with a ballast separator that chutes plus 1-in. material directly to the No. 4 bin. The top deck feeds 1-in. plus gravel excluded by the separator screen to a 36-in. picking belt about 12 ft. long, where a small amount of debris is removed by a man on either side. This through-product falls to the No. 1 bin. Material from the screen's second deck chute feeds  $\frac{1}{2}$  to 1-in. gravel to the No. 2 bin. The first and second decks only are water sprayed by pumped fresh river water. The third deck chute feeds  $\frac{1}{4}$  to  $\frac{1}{2}$ -in. gravel to the No. 3 bin.

Bins No. 1 and No. 2 of 50-ton capacity, and bins No. 3 and No. 4 of 90-ton capacity are installed over a double railroad track.

The sand product, which averages better than 70 percent of the total, is sized to fit almost any specification.

The through sand product from the lower deck of the Pioneer screen is diverted through a three-way system: by flume to a 20-ft. wood rake bowl sand classifier where fresh river water is added; to a 4 x 10-ft. Allis-Chalmers single deck low head vibrating screen, which scalps off  $\frac{1}{8}$ -in. material for mortar sand; and by flume to the sand storage area where overflow water returns to the river.

*Please turn to page 186*



## From blast furnace slag to cement . . .

By TARO TANAKA\*  
in collaboration with  
Toru Sakai and Jun Yamane

**How the addition  
of activators  
affects the hardness  
of the final product**

**P**ART TWO OF DR. TANAKA'S article continues the discussion of the hardenability of blast furnace slag cements. The third and concluding section will cover the surface fragility of these cements. Part one was printed in the March, 1957 issue of *ROCK PRODUCTS*.

The test specimens for compressive strength were in the shape of small cylinders 1 cm. in diameter and 2 cm. high, made from 1:2 mortar of the slag-sulfate cements and Toyoura standard sand at water cement ratio .55. The specimens were cured in moist air for 24 hr. until removed from the mold and it was necessary to cover the air-contacting surface of the specimens closely with glass plate in order to prevent the unfavor-

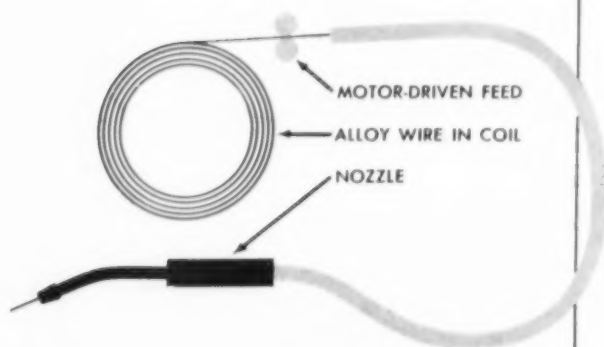
*Please turn to page 111*

\*Taro Tanaka is a Doctor of Engineering and is in charge of research for the Onoda Cement Co., Ltd., Onoda, Yamaguchi Pref., Japan. His previous studies of synthetic glassy slags have appeared in the July, 1951 and July, 1956 issues of *ROCK PRODUCTS*.

# WHAT IS **SEMI-AUTOMATIC** **HARD-FACING?**

Here is one of industry's newest maintenance tools used to radically reduce hard-facing costs.

It is simple, highly versatile and can be installed at moderate price.



Semi-automatic hard-facing is a process which combines the high deposit rates of automatic welding with the positioning and setup convenience of the manual method. It utilizes a complete series of Stoodly fabricated tubular wires containing alloys that meet all hard-facing requirements. These wires, supplied in layer wound coils, are mechanically fed to the nozzle by the semi-automatic welding machine. The weldor merely directs the arc as the metal is deposited on the work, the machine automatically starting the wire feed when the arc is struck, stopping it when the arc is broken. Numerous advantages result when rebuilding and maintaining equipment in all types of heavy industry.



*Repointer welded on with Stoodly Nickel Manganese and entire tooth hard-faced with Stoodly 121*



*Roll brought up to size with Stoodly Nickel Manganese and corrugations rebuilt with Stoodly 100*

**HIGH WELDING SPEEDS**—Two to four times faster than the manual method at correct welding amperages, semi-automatic hard-facing effects enormous savings in time. Penetration of the base metal and dilution of the deposit are reduced, with lower heat input, all highly desirable features of this process.

**FULL VISIBILITY**—No submerging flux is required; the weldor enjoys complete visibility of the weld at all times. Flux dams are unnecessary.

**NO STUB END LOSSES**—Wires are supplied in continuous coils. There is no stub end waste nor time lost in changing electrodes.

**SEMI-AUTOMATIC MACHINES**—Now supplied by a number of manufacturers, all can be used satisfactorily with Stoodly semi-automatic wires with minor conversions consisting of wire guides, nozzle and nozzle tip. Conversion kits are available from all Stoodly distributors.

**WHERE CAN SEMI-AUTOMATIC HARD-FACING BE ECONOMICALLY USED?**—In general, almost any work now hard-faced manually can be completed faster and cheaper semi-automatically with deposits having wear resistance usually superior to manual electrodes of similar analysis. The illustrations are typical of current semi-automatic applications.

Write for circular. Contains a full description of present Stoodly semi-automatic wires and typical applications.

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*Dredge pump casing hard-faced with a combination of Stoodly 121 and Stoodly 100*



*Shovel track pads rebuilt with Stoodly Nickel Manganese*



*Mill hammers brought up to size with Stoodly Nickel Manganese, using copper form, then hard-faced with Stoodly 100*



*Tool joints hard-faced with Stoodly 130 or Stoodly 100*

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# THE CASE OF THE IDEA THAT SAVED TWO DAYS

...I'M GOING TO LOSE ABOUT TWO DAYS WHILE WE REBUILD THAT FLYWHEEL CLUTCH!



WHY SHOULD YOU? PUT IN A REBUILT ASSEMBLY FROM OUR EXCHANGE STOCK AND YOU'LL HAVE YOUR TRACTOR GOING THIS AFTERNOON!

CAT



IS IT EXPENSIVE?



NOT AT ALL...

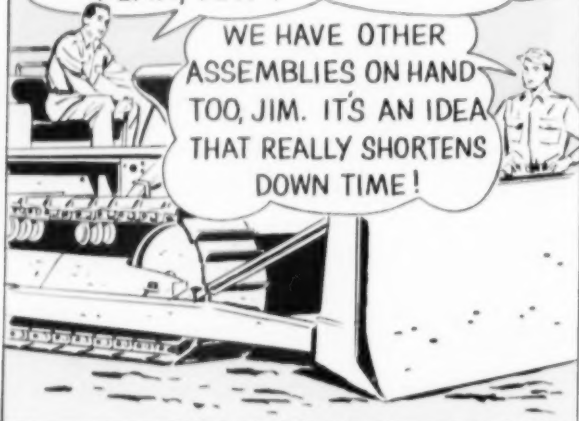
--YOU PAY ONLY FOR THE PARTS AND REPAIR SERVICE TO PUT YOUR CLUTCH IN THE SAME FIRST-CLASS SHAPE AS THE EXCHANGE UNIT. THEN YOUR REBUILT ASSEMBLY GOES INTO OUR EXCHANGE STOCK.



EXCELLENT IDEA!  
GO AHEAD...

## THAT AFTERNOON

SURE AM GLAD I FOUND OUT ABOUT YOUR PARTS ASSEMBLY EXCHANGE PLAN, ART!



WE HAVE OTHER ASSEMBLIES ON HAND TOO, JIM. IT'S AN IDEA THAT REALLY SHORTENS DOWN TIME!

## CATERPILLAR\*

\*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.



LET ME HELP KEEP YOUR CAT\* EQUIPMENT ON THE JOB!

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

Table 5

No.	Slag-cement Sample	Compressive Strength (kg/cm <sup>2</sup> )				Strength Ratio Percent
		3 days	7 days	28 days	Strength Value	
1	A <sub>1</sub>	34	87	102	263	43
2	A <sub>2</sub>	171	238	272	681	111
3	A <sub>3</sub>	31	41	128	200	32
4	B <sub>1</sub>	69	74	96	239	39
5	B <sub>2</sub>	130	188	191	509	83
6	B <sub>3</sub>	195	251	313	759	123
7	B <sub>4</sub>	158	227	347	732	119
8	B <sub>5</sub>	31	46	281	358	58
9	B <sub>6</sub>	11	16	62	89	14
10	C <sub>1</sub>	64	75	123	262	43
11	C <sub>2</sub>	109	143	238	490	80
12	C <sub>3</sub>	127	193	315	635	103
13	C <sub>4</sub>	106	173	315	594	96
14	C <sub>5</sub>	89	135	284	508	82
15	C <sub>6</sub>	20	42	157	219	36
16	C <sub>7</sub>	11	15	44	70	11
17	D <sub>1</sub>	48	86	192	326	53
18	D <sub>2</sub>	67	114	291	472	77
19	D <sub>3</sub>	77	131	307	515	84
20	D <sub>4</sub>	65	124	294	483	78
21	D <sub>5</sub>	48	86	216	350	57
22	D <sub>6</sub>	53	74	124	251	41
23	D <sub>7</sub>	32	51	76	159	26
24	D <sub>8</sub>	9	16	36	61	10
25	E <sub>1</sub>	36	77	212	325	53
26	E <sub>2</sub>	62	128	272	462	75
27	E <sub>3</sub>	42	76	169	287	47
28	E <sub>4</sub>	41	54	97	192	31
29	E <sub>5</sub>	32	45	78	155	25
30	E <sub>6</sub>	31	47	75	153	25
31	E <sub>7</sub>	20	32	70	122	20
32	E <sub>8</sub>	15	15	47	77	13
33	F <sub>1</sub>	22	32	75	129	21
34	F <sub>2</sub>	19	24	56	99	16
O <sub>1</sub>		55	148	305	508	82
O <sub>2</sub>		82	202	291	575	93
Sealithor		116	278	398	792	128
Normal Portland Cement		96	196	325	617	100

The compressive strength of the cements containing two percent portland cement clinker

## Blast furnace slag

Continued from page 107

able action of the CO<sub>2</sub> in the atmosphere. The compressive strength of the cements containing two percent of portland cement clinker is shown in Table 5. Table 6 gives the strengths of cements with four and with six percent portland cement clinker.

While water-cement ratio of 1:2 mortar with Toyoura sand is specified as .65 by Japanese Industrial Standard R-5201, the water-cement ratio of .55 was used to avoid bleeding of the standard mortar.

When two percent portland cement clinker has been added, the hardenability of the slags varies

Table 6

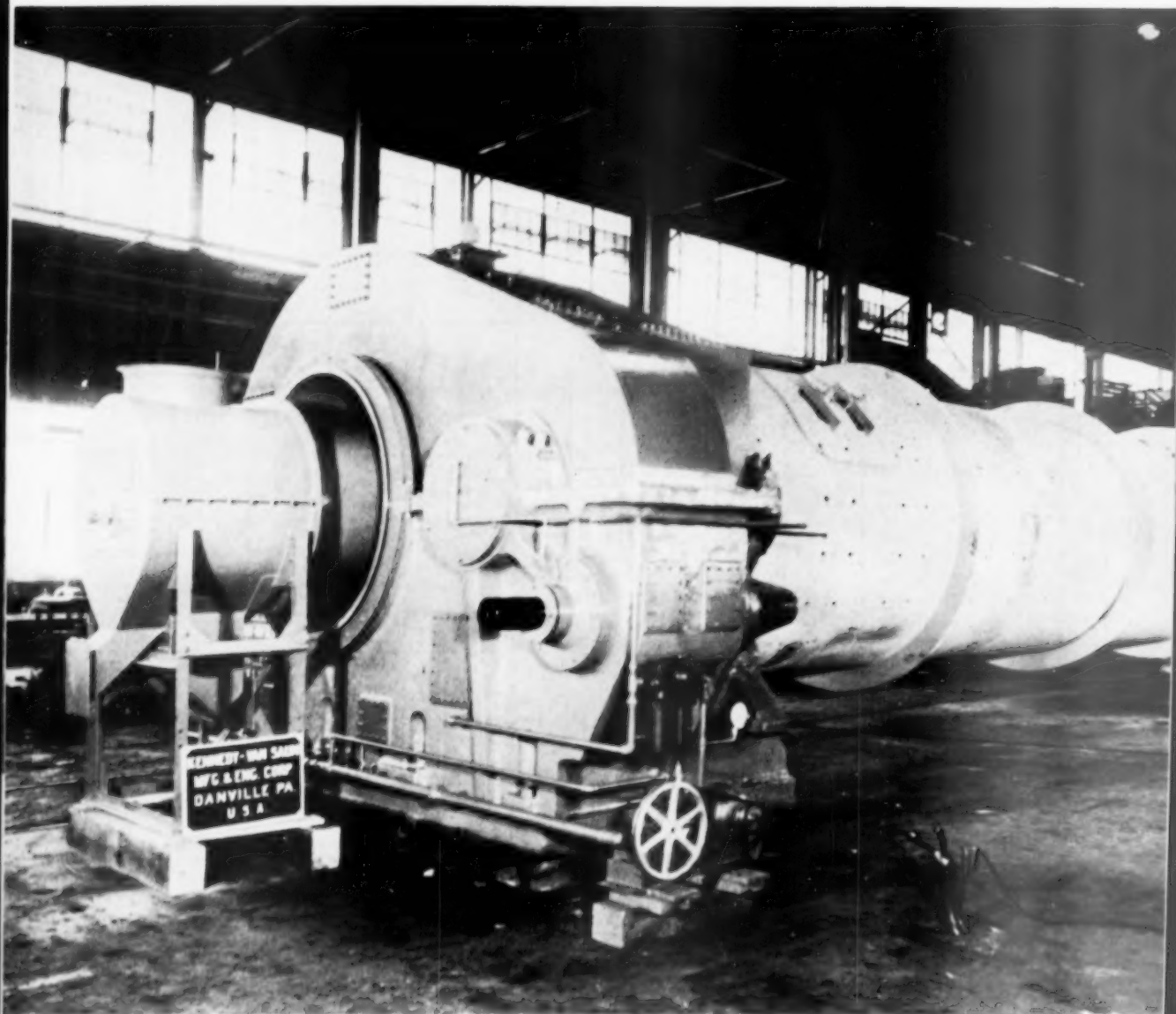
Slag	Addition of Clinker (Percent)	Compressive strength (kg/cm <sup>2</sup> )			
		3 days	7 days	28 days	Strength Value
A <sub>1</sub>	2	74	87	102	263
	4	68	81	120	269
	6	89	105	151	345
A <sub>2</sub>	2	171	238	271	680
	4	87	101	121	309
	6	62	78	103	243
B <sub>1</sub>	2	130	188	191	509
	4	72	78	113	263
	6	93	240	250	583
B <sub>2</sub>	2	198	262	313	773
	4	139	163	164	466
	6	74	99	119	292
B <sub>3</sub>	2	158	227	347	732
	4	209	289	376	874
	6	248	280	348	876
C <sub>1</sub>	2	64	75	123	262
	4	80	92	118	290
	6	108	134	170	412
C <sub>2</sub>	2	109	143	238	490
	4	73	96	100	269
	6	108	127	151	385
C <sub>3</sub>	2	127	193	315	635
	4	90	104	166	360
	6	105	135	172	412
C <sub>4</sub>	2	106	173	315	594
	4	177	206	259	642
	6	107	117	162	386
C <sub>5</sub>	2	89	135	284	508
	4	160	235	356	751
	6	218	227	358	803
D <sub>1</sub>	2	48	86	192	326
	4	80	116	152	348
	6	119	126	153	398
D <sub>2</sub>	2	67	114	291	472
	4	96	110	138	344
	6	113	142	164	419
D <sub>3</sub>	2	77	131	307	515
	4	76	89	101	266
	6	144	162	180	486
D <sub>4</sub>	2	65	124	294	483
	4	122	135	164	421
	6	132	139	171	442
E <sub>1</sub>	2	36	72	212	320
	4	101	159	298	558
	6	75	101	145	322
E <sub>2</sub>	2	62	128	272	462
	4	114	191	332	637
	6	106	130	163	399
E <sub>3</sub>	2	42	76	169	287
	4	100	156	302	558
	6	145	180	238	563
E <sub>4</sub>	2	41	54	97	192
	4	103	144	252	499
	6	146	104	274	604

The strengths of cements with four and with six percent portland cement clinker. Strength value means the sum of the compressive strength at the curing ages, 3, 7 and 28 days. The cements are denoted by the slags used in each of them

with their chemical composition as shown in Table 5. That the range of excellent hardenability does

Please turn to page 114

# KENNEDY GRINDING



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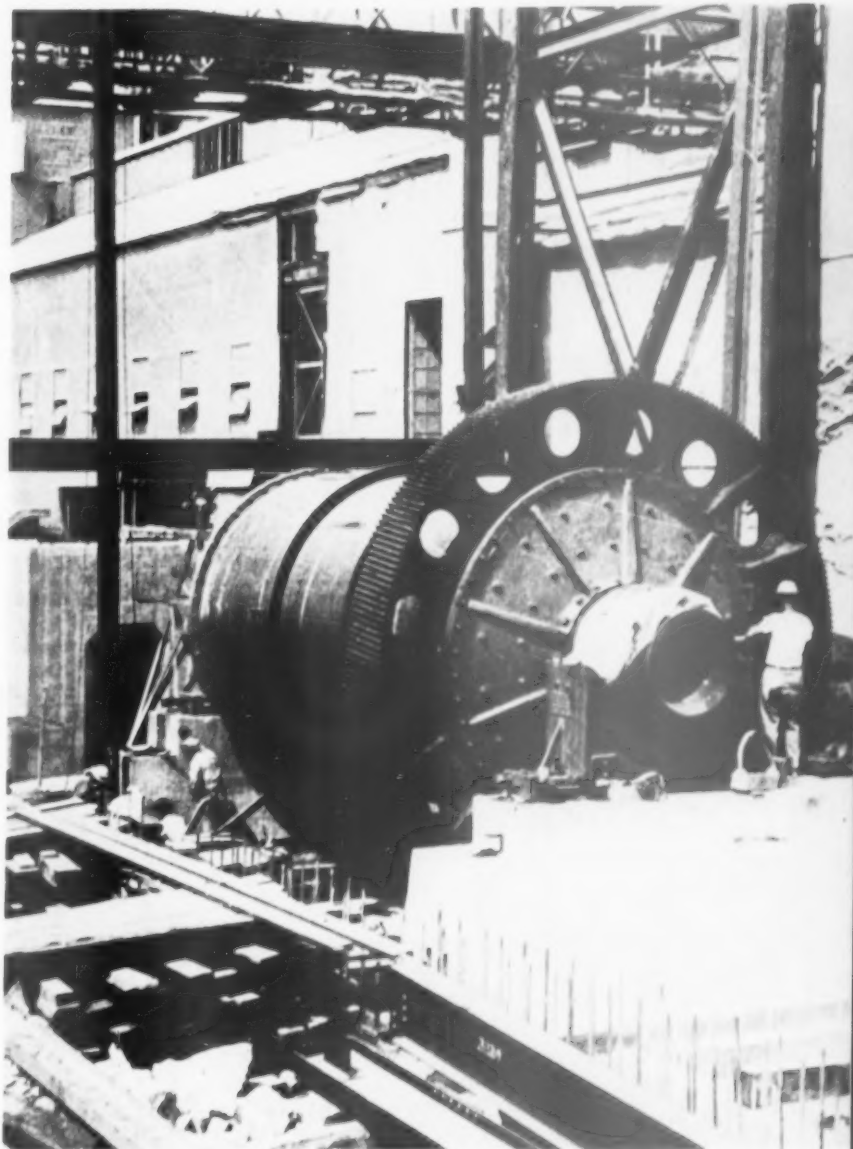
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- Complete Cement Plants
- Complete Aggregate Processing Plants



11' X 20' KVS CLINKER GRINDING MILL, SINGLE HELICAL RING GEAR, INSTALLED AT PETOSKEY, MICH., PLANT OF PENN DIXIE CEMENT CORPORATION.

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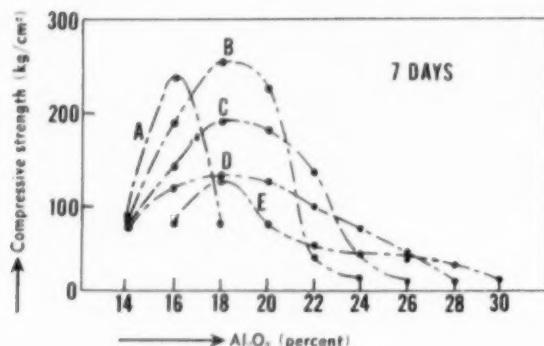
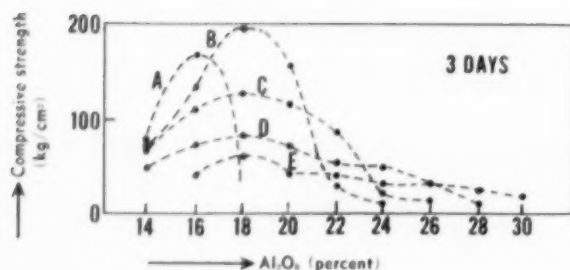


Figure 1. The three diagrams appearing on this page represent the hardenability of slags with the same CaO content

## Blast furnace slag

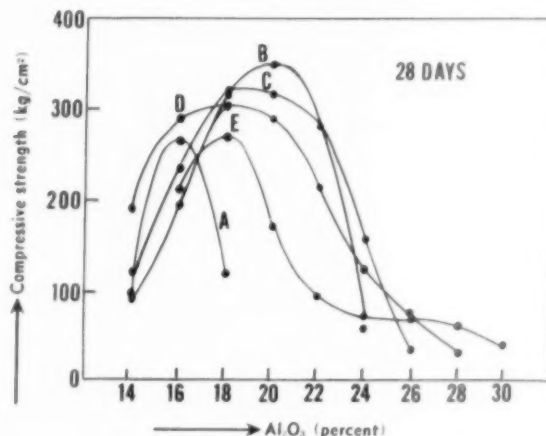
Continued from page 111

not coincide with the activation with portland cement in Fig. 1 is shown by the tendency of hardenability of the slags containing the same CaO and different  $Al_2O_3$  content. The relation between the strength of the cements and the chemical compositions of the slags used in these cements is given in Fig. 2.

The hardenability of the slags (except for the slags in series A, which contain 52 percent CaO) declines remarkably as the content of  $Al_2O_3$  exceeds 22 percent or goes under 16 percent. According to "DIN 4210 Sulfauettzement," the  $Al_2O_3$  content of the granulated blast furnace slag specified to be more than 13 percent is equivalent to 15 or 16 percent assuming the total of CaO,  $Al_2O_3$ , and  $SiO_2$  in the slag to equal 100 percent. It is noticeable, therefore, that the lower limit of 16 percent with respect to  $Al_2O_3$  content obtained from our experiment, nearly agreed with the value of  $Al_2O_3$  content specified in DIN 4210.

In the 16 to 22 percent range of  $Al_2O_3$  content, the slags series B with 50 percent CaO show the most excellent hardenability through all ages. The slags of C, D and E series follow in the decreasing order of CaO content.

In the slags series A,  $A_1$  with 16 percent  $Al_2O_3$ , shows much higher hardenability compared with  $A_2$  and  $A_3$  with 14 and 18 percent  $Al_2O_3$  respectively. We conclude that the hardenability of the slags



Note: A, B, C, D and E represent the series of the slags which contain 52, 50, 48, 46 and 44 percent of CaO respectively

declines steeply with a small change of  $Al_2O_3$  content, as apparent in Fig. 1.

The difference of hardenability reduces with progress of curing age among the slags B, C and D series. When comparing the hardenability of B, with that of C, and D, the percentages of compressive strength of C, and D, at the age of three days are 65 and 40 percent respectively; at seven days 77 and 52 percent; and at 28 days 101 and 91 percent. Thus, it may be considered that at

Please turn to page 117

HOW ONE PRODUCER TURNS OUT  
25% AGLIME AND 75% CRUSHED STONE  
IN **ONE** OPERATION . . .  
AT A 250-TON-PER-HOUR RATE



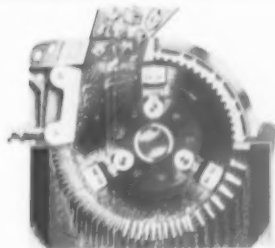
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This Cedarapids Unitized Plant, with a 4033 Hammermill Secondary in key position, maintains a 250 ton per hour production pace for a total annual output of approximately 38,000 tons of aglime and 112,000 tons of crushed limestone. When 3 or 4 sizes of finished product are required simultaneously, a Cedarapids Portable Screening unit is used as shown above.

For producing aglime or crushed limestone, or both, in one operation, you can't beat the high product quality, big capacity and low-cost operation of Cedarapids Hammermills. You can have them in complete portable crushing and screening plants, as individual units, or in stationary plants, in 4033, 3033 and 2033 sizes. See your Cedarapids distributor today for details.



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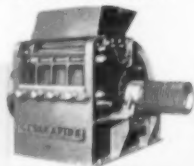
A revolutionary operating principle combines an impact breaking and milling action which results in the uniform, fine agricultural limestone that assures repeat orders. And size for size, Cedarapids Hammermills turn out more tons per hour than other similar types of equipment!

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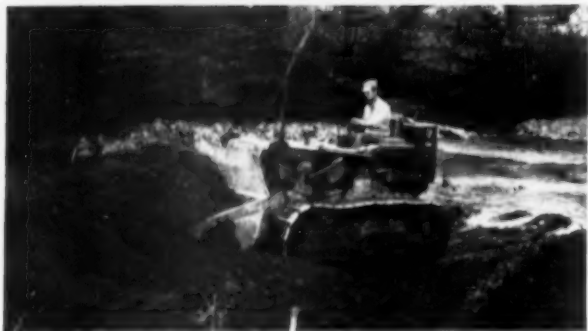


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Impact Breaker

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**"Plenty of room and comfort!"** says operator Lawrence Rutherford for Hoosier Lime and Stone Co., Salem, Indiana. "This TD-9 is faster, easier to operate and vision is much better." He commands full 41" *ground-level* bucket roll-back to heap the bucket, every time. Semi-skid method gives him fast load transport on exclusive skid-shoes. Exclusive level raise action all the way up helps "keep the heap" till he dumps.



**Prove International Drott performance** for yourself. Find out why it's the favorite of the man in the seat. Ask your International Drott Distributor for a demonstration, today. He'll show you all the many exclusive Four-In-One or Skid-Shovel profit pay-off features!

**"Here's why we prefer International Drott in the pits..."**

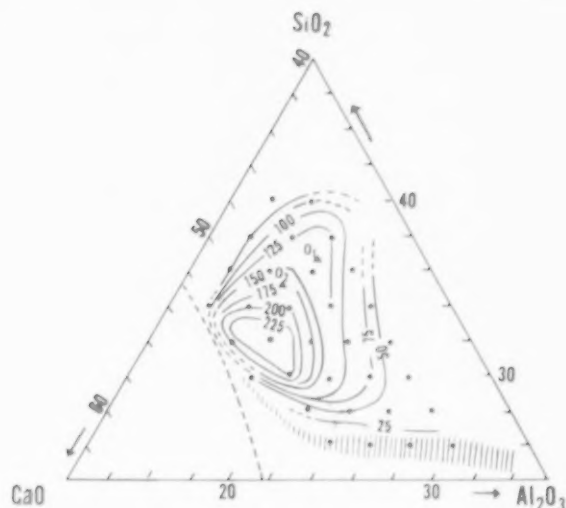
**"A powerful, smooth-operating loader,"** declares owner-operator L. D. Lynch of Grand Blanc, Mich. "Hydro-Spring really makes a difference in operator comfort and machine protection." Exclusive Hydro-Spring is a hydraulic cylinder connected to the main lift system enclosed in a heavy-duty locomotive-type coil spring—to swallow slam-bang shocks—protect equipment and hydraulic hoses.

**"My experience with seven International crawlers has been mighty good** all the way," says owner-operator Paul Bryson of Hazelwood, N. C. "My old TD-9 has 10,000 hours on the meter." Such performance is behind his recent purchase of a new bonus-powered TD-9 Skid-Shovel®. He gets the original pry-action break-out force with triple the digging power of ordinary front-end loaders!

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Drott Manufacturing Corp., Milwaukee 15, Wisconsin

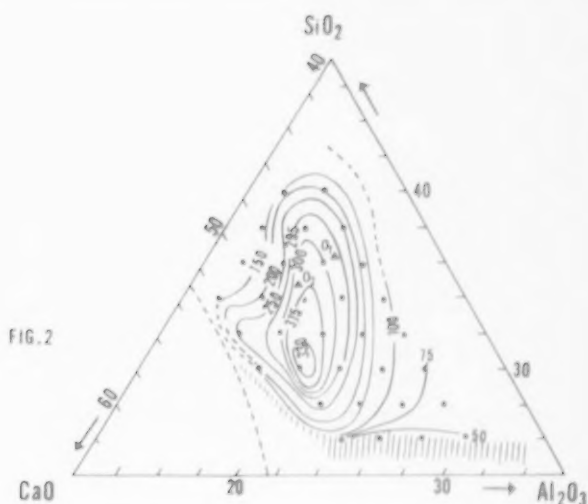


**INTERNATIONAL®**  
**DROTT®**



Curing age: 7 days

**Hardenability of the slugs** under the activation with anhydrite and two percent of portland cement clinker



Curing age: 28 days

## Blast furnace slag

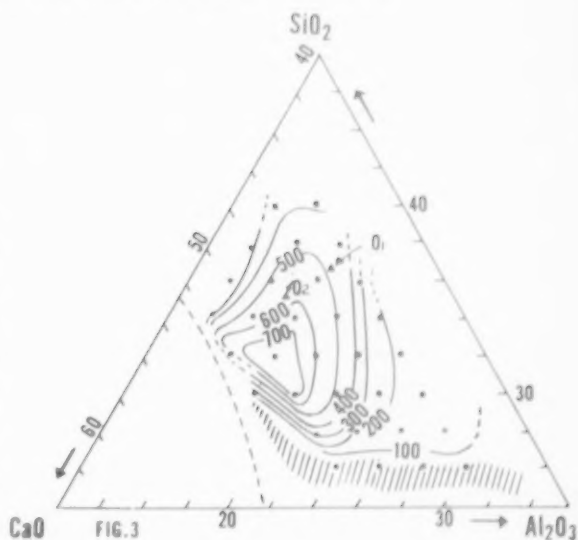
Continued from page 114

early ages the compressive strength becomes higher with the increase in CaO content of the slugs, and that the rate of strength increase becomes larger with the decrease in CaO content of the slugs, as long as  $Al_2O_3$  is about 16 to 22 percent.

Table 5 shows that the cements prepared from the slugs whose compositions are in the range of CaO 46 to 50 percent,  $Al_2O_3$  16 to 20 percent and  $SiO_2$  28 to 34 percent, gave more than 80 percent of strength value compared with the common Japanese portland cement simultaneously tested by the same procedure with the slag-sulfate cements. Those cements containing slugs of the composition of 50 percent CaO and 18 to 20 percent  $Al_2O_3$  showed greater strength value than that of the portland cement.

As apparent in Fig. 3, the center of the chemical compositions of the slugs with excellent hardenability shifts from the point of 33 percent  $SiO_2$ , 15.5 percent  $Al_2O_3$  and 51.5 percent CaO to the point of 32 percent  $SiO_2$ , 18 percent  $Al_2O_3$  and 50 percent CaO, by changing the chief-activator from portland cement to anhydrite. It is noticeable that the region of exceptionally low hardenability of the slugs is traced out at almost the same position when activation is with anhydrite as when activation is with portland cement.

When portland cement clinker content is four and six percent the compressive strength of the slag-sulfate cements with slugs in the range 46 to 52 percent CaO, 32 to 38 percent  $SiO_2$  and 22 percent  $Al_2O_3$ , is usually less than when clinker content is two percent, as in Table 6. This slag composition includes the granulated blast furnace



The figures on the contour lines show the compressive strength of the specimen prepared from 1:2 mortar ( $w/c=0.55$ ); the cements consist of 83 part of slag, 15 part of anhydrite and 2 part of portland cement clinker, by weight

slugs ordinarily produced in Japan. Therefore the proper content of portland cement clinker in slag-sulfate cement is about two percent for the purpose of producing cement of good strength in Japan.

The synthetic slugs with compositions out of the range mentioned, increased their hardenability by changing the clinker content in the cements from two percent to four or six percent. Considering these results, it was clarified that the clinker content in the slag-sulphate cement should be determined according to the chemical composition of the slag used in order to produce cements of high hardenability.

END

## Conservation programs

*Continued from page 93*

grams point out the need. More farmers will use these practices when these educational programs are followed by promotional activities of those supplying the materials necessary to carry out the practices."

There's a lot of confusion about A.C.P. "One of the most persistent problems in administering the A.C.P. program," said one agronomist, "lies in the fact that farmers and those who wrote the act have different ideas about what it is supposed to do." He suggested an alternative to finding new techniques that can be used in administering this program. "We should first get a decision on whether A.C.P. is just another governmental subsidy to be spread as equitably as possible among farmers, or a means of encouraging and giving some financial assistance to farmers who want to start a soil and water conservation program." As long as there is this difference of opinion as to what the Congress really appropriates A.C.P. funds for, he said, there always will be confusion.

Other specific recommendations for changes in A.C.P. administration practices would require approval on the federal level, and some would require only modification of the program as administered at the state level. (1) Give payments for participation in terms of certificates which could be redeemed in cash or in mixed feed at the export price. (2) Use unexpended Soil Bank moneys in the A.C.P. (3) Give credit for lime where it is applied to grass pastures and to fields that will eventually be fitted for legumes and grass seedings. (4) Permit the reliming of fields where soil tests indicate a need for additional lime.

**Rate of spending funds is up.** For the first time this last year, counties in many states spent their funds in full. We asked agronomists why this came about, and if agricultural limestone producers had helped. Most of the answers were congratulatory to producers. Evidently, the efforts made in educational and promotional programs have paid off.

Yet, on one point there was a conflict of opinion. Answers to the first question (A.C.P. administration) indicated that number of farmers participating in the program was being held down because many "didn't understand the program." The opposite view was expressed at least once that a better understanding of the program was one of the reasons for an increase in the rate of spending funds allocated. Both views may be true, depending upon location and the amount of education and promotion work being done.

Promotional work, particularly on the part of

producers, evidently is a major cause for increased use of limestone, and thus more A.C.P. funds. "Farmers respond quickly to educational or demonstrational programs which show economic returns," said one respondent.

A little different approach was taken by one agronomist on education programs by producers. "I believe," he said, "that the limestone producers have finally awakened to the fact that advertising and publicity for soil treatments other than limestone has blinded the farmer to the real value of limestone. Limestone producers have tried to meet this competition by also putting in the field good publicity and advertising campaigns."

He went on to say: "Limestone producers must constantly keep calling the farmers' attention to the fact that limestone pays as much or more per dollar invested than any other soil amendment, and that it should come first in most soil improvement and maintenance programs."

Farmers now are looking for all the financial assistance they can get. That's another reason for an increase in the rate of spending A.C.P. funds. During better times, it was said, the farmer did not go after that source of money. Now, he is taking a little more time and swallowing a little pride to get the help. That fact, plus a relaxation of the rules on compliance for which A.C.P. payments are made, has been responsible for full use of funds in many counties for the first time.

Other reasons given for more complete use of funds include an increase in prices and freight rates; use of more materials by farmers in some areas; and floods in certain areas, causing the need for re-seeding and re-fertilizing. It was stated, too, that the national program is not now too restricted in the use of minerals as it was in 1954-1955.

**How about the mandatory soil test?** Agronomists were virtually unanimous in their declaration that the mandatory soil test is beneficial to the conservation programs. They believe it to be the most intelligent approach to success in achieving goals set by A.C.P.









One reported that use of the test will result in more use of limestone in the long run, because test reports to farmers contain recommendations for seed and fertilizer in addition to limestone. This should increase successful seedings, and finally more use of limestone. Another said that testing should be continued as an educational tool and a basis for more limestone use.

"The testing of soil samples is absolutely essential to the intelligent use of limestone," said one agronomist. Taking a little different tack, another said that soil tests are an intelligent safeguard on the proper use of A.C.P. funds. Also, the testing will point up the need for limestone.

*Please turn to page 178*

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 <p>Style AA-RB</p>	<p>Handle same type materials as Style AA buckets. However, these are recommended for extra-heavy service conditions.</p>		<p>Style AA-RB buckets feature double-thick backs for greater strength against bolt pull-through, plus heavy "pick-up contoured" digging lip and reinforced ribs.</p>
 <p>Style B</p>	<p>Commonly used for handling coke, ores, stone, and other coarsely broken materials.</p>		<p>Style B cast elevator buckets offer the proper shape and low front to insure clean discharge at relatively low speeds. Designed for inclined elevators.</p>
 <p>Continuous</p>	<p>Designed for elevating coal, sand, gravel, crushed stone, and similar dry materials.</p>		<p>Continuous cast elevator buckets provide high capacities at low speeds. The flanged front acts as a chute for succeeding bucket—provides clean, gentle discharge.</p>

To obtain better performance, less downtime from your bucket elevators—choose the cast bucket you need from the complete Link-Belt line. They're available in malleable iron or Promal. All have reinforced corners for added strength—are designed for fast filling and quick, clean discharge.

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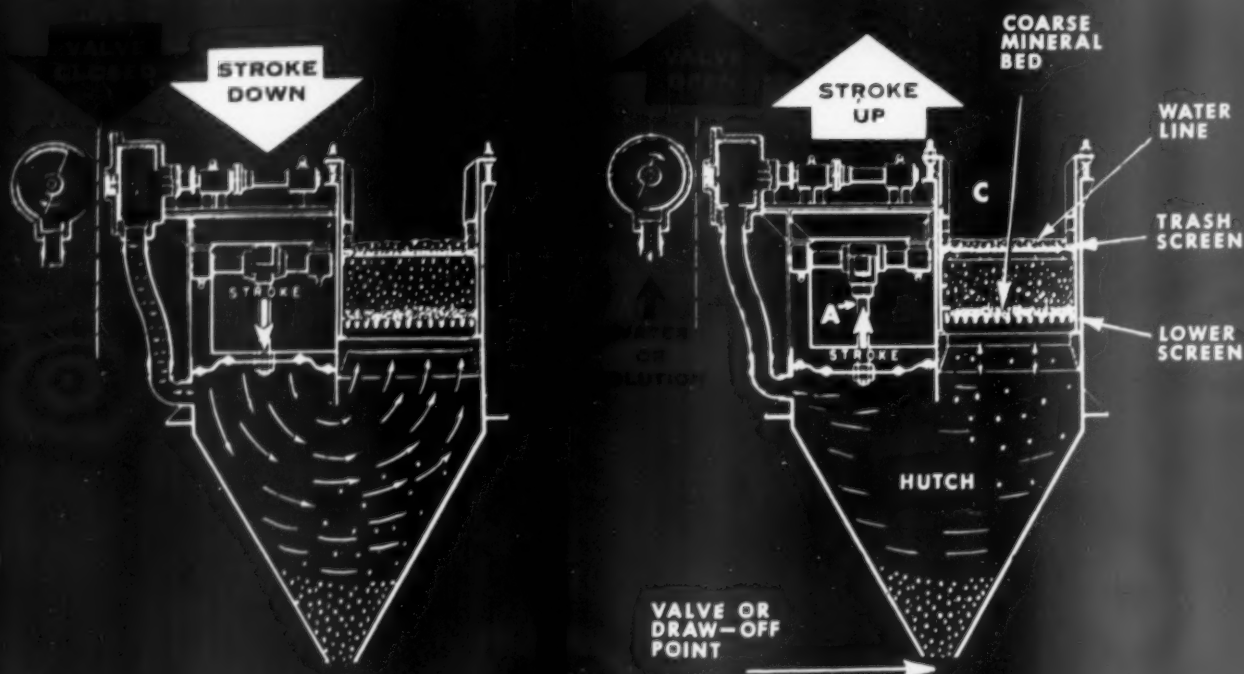


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Principle of jig operation

## The story of

# BARITE

By WALTER B. LENHART

**P**RACTICALLY ALL OF THE BARITE produced is used in the oil well drilling industry as a heavy mud to hold back water, gas, shales or even loose material that might inhibit drilling operations.

Barite is barium sulphate, a common ore of the metal barium, with the formula  $\text{BaSO}_4$ . It is usually a white, non-vitreous rock and quite heavy, having a specific gravity in the 4.5 range. Known as "heavy spar," it has many uses in the oil well drilling industry and in the arts, as a basic material for the manufacture of paints.

The existence of barite in the high Sierra Nevada mountains south of Little Lake, California,

has been known for some time. The Macco Corporation's mine is 17 miles west from their processing plant, which is located near Inyokern on U.S. Highway 6 connecting Los Angeles with Bishop, Calif. and the more northerly Nevada communities. A few miles east is the right-of-way of the Southern Pacific Railroad. Portions of the Inyokern military establishment can be seen from the plant.

The open pit mine is located on the eastern flanks of the high Sierras at an elevation of 8,400

*Please turn to page 122*



1. Cooler pressure control
2. Firing temperature control
3. Miscellaneous temperature recorder
4. Cooler temperature control
5. Backend temperature control
6. Monitor system
7. Oxygen analyzer recorder
8. Fuel flow recorder

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Designed and built by L&N specialists, this control system applies modern concepts of instrumentation and standardized production techniques to Ideal's wet process kiln.

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4. **Cooler temperature** — Combustion air temperature is automatically stabilized by 3-action electric control and Speedomax G.

5. **Backend temperature** — Automatic temperature regulation is assured by 3-action electric control and Speedomax G.

6. **Monitor system** — Unique L&N *system engineered* design provides continuous records of operating performance of 10 important variables in the system.

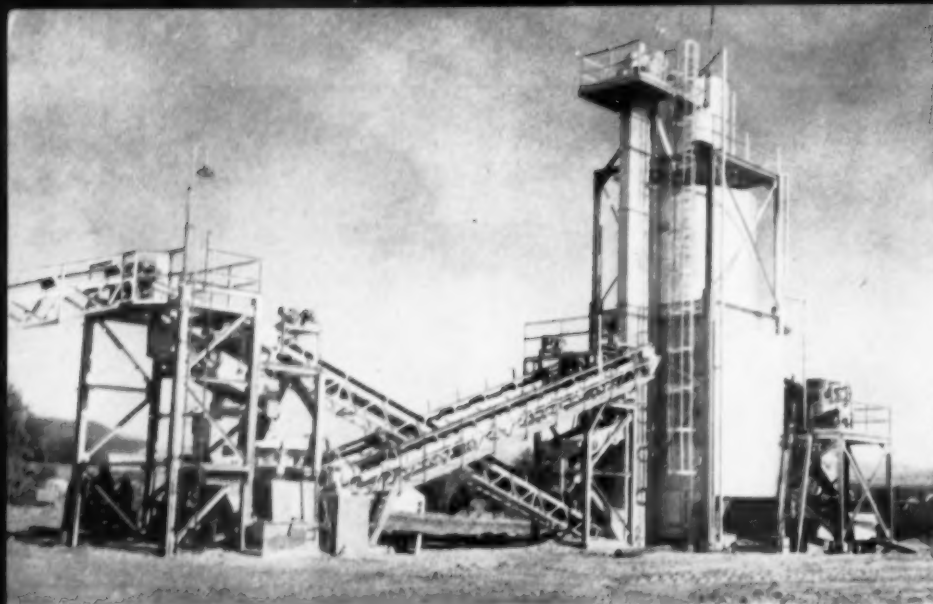
Oxygen analyzer and fuel flow recorder complete the system.

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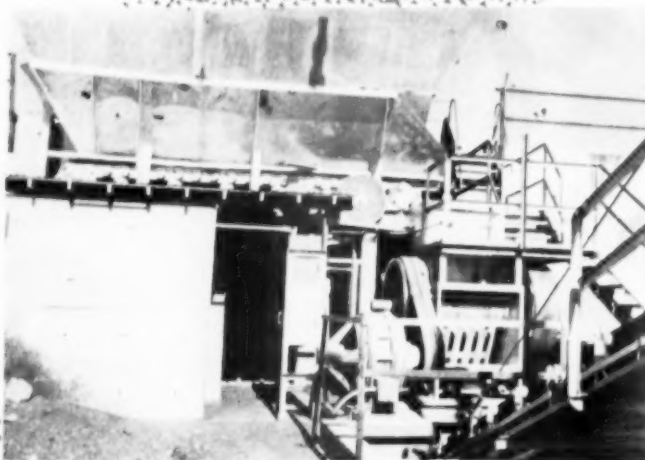


The two secondary crushers are at the left. Over these is one of the screens. The second screen is at center

## Barite

*Continued from page 120*

Apron feeders serve the primary jaw crusher



Here the tailings are being de-watered. Later a bulldozer will push them aside.



ft. The plant is at 2,840 ft. elevation in Kern County, with the mine in Tulare County. The whole area is distinctly desert in character.

The ore at the mine is a vein structure and about 50 ft. wide. The wallrock is mostly granite with some shales in evidence. The crude material ranges from dark to white in color and contains 75 to 80 percent barium sulphate. The concentrates produced at the plant are in the 93 to 94 percent range. The ore has a specific gravity of 3.90 to 4.00 and the concentrates about 4.30.

All mining is done under contract by Kerbach-McCutchen of Bishop, Calif. The Belyea Truck Co., a Macco Corp. subsidiary, does the hauling. A road

*Please turn to page 125*

## **"...tops in ag-lime equipment"**

"We have been using your Lippmann Pulverizer since 1946 and we like it so well that we thought we'd let you know about it. It has given us production as high as 100 ton per hour with exceptionally good wear service. We are producing Ag-Lime with your machine and we are getting almost 100 per cent production of this product. We've never had a breakdown, and only just recently replaced the rotor for the first time. In our opinion your Pulverizer (32x24) is top Ag-Lime equipment."

(Signed) **ELMER BECKER**  
BECKER AND TUCKWOOD  
Lancaster, Wis.



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(Signed) **ROBERT IVEY**  
IVEY CRUSHING & CONSTRUCTION Co.  
Mineral Point, Wis.



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tough forged hammer arms, oversize bearings and shaft provide longer wear service. Remember too, Lippmann Pulverizers produce just about 100% minus 8-mesh ideal ag-lime product — another reason for their wide popularity.

Bulletin 1160 contains many other reasons why Lippmann Pulverizers (sizes range from 24 x 12 to 40 x 36) are tops with ag-lime producers. Get your copy and full information from your local Lippmann Distributor, or write to Lippmann Engineering Works, Inc., 4605 W. Mitchell St., Milwaukee 14, Wis.

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dumping"...**



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**H. G. Moore, superintendent**, Nello L. Teer Company, Durham, N. C., comes right to the point and tells why their crushed stone company has ordered three more International "65" Payhauler trucks. "Our first '65' has worked 1,050 hours with satisfactory service. It has plenty of power for high-speed delivery, handles easy and dumps fast."

Mr. Moore made this statement and recommended the purchase of the three new "65" Payhauler trucks after measuring the service and production of three other leading haulers working in the quarry. The 1,050 hours gave Mr. Moore and the company sufficient time to test the Payhauler's ample, turbo-charged diesel power plus load-matched

gear ratios...a combination which smooths the get-away and permits quick shifting into time-gaining, hill-climbing higher gears! This performance under rough and rugged conditions has made the "65" stand out as a haul unit *long on trouble-free service life... short on travel time...and big on production!*

Prove to yourself what Nello L. Teer proved...that International Payhauler trucks will boost your pit and quarry production and profits...and lower service maintenance costs. Try the Model 65's safe and easy full-load maneuverability. Test the ample power of its 250 hp turbo-charged diesel engine...save up to 10% on fuel. Ask your International Construction Equipment Distributor for a demonstration, soon!

**Double-acting hoist cylinder** in all stages with 106,300 pounds of force in first stage permits dumping heaped load of granite into hopper in less than 10 seconds. Hydraulic snubbing action prevents undue stress on hoist cylinders...and gentles body return to frame. Model "65" Payhauler gives you big, profit-boosting 18-ton capacity; Model "95" a husky 24 tons!



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## Barite

*Continued from page 122*

connects the mine and plant, portions of which are paved. Crude ore is hauled from the mine by a fleet of four Kenworth trucks pulling trailers with a payload of 25 tons. The road is narrow, steep and twisty. The trucks are flat racks with low side boards. Flat racks are used as they can haul a larger payload. The empty trucks each carry a heavy piece of concrete over the rear axles to get needed traction to get back up the steep road.

During the winter months deep snows normally blanket the mine area so provisions have been made at the plant to ground store sufficient crude ore to run the plant the year around. While some crude is stored ahead of the primary crusher, most of the material is in a surge pile that follows the primary crushing operation. A Caterpillar tractor and dozer push back the crushed ore as required to have more material available. Climatic conditions at the plant are ideal for winter operations although in the summer it is quite hot and dry.

A Hough Payloader has been provided with a special ram or pusher attachment. When the loaded trucks arrive at the plant, they draw up alongside a steel hopper that has sides about 30 in. high. The side boards of the truck are then dropped. By operating the frontend loader at right angles to the long axis of the truck, this unit shoves the crude ore into the steel hopper. Under this is a Pioneer apron feeder serving a 10- x 24-in. primary jaw crusher. Crushed material falls to a belt conveyor serving the surge pile.

Gravity gates under the surge pile feed the minus 2-in. crude ore to a belt conveyor serving a Denver Equipment Co. 5- x 6-ft. single deck scalping screen. All material is crushed dry to minus 1/4-in. by either an 18-in. Tel-smith or a 24-in. Symons cone crusher. Crushed ore from these units is conveyed to the final screen which is also a 5- x 6-ft. Denver Equipment Co., single deck unit. The plant is so designed that plus rejects are conveyed back to the secondary crushers.

The dry minus 1/4-in. ore is elevated to a steel bin under which are three belt-type feeders. One is a Wemco unit and the other two are Denver Equipment Co. units.

At this California operation the barite is upgraded by the use of Denver Equipment Co. jigs. The concentrates are shipped by truck to the Rosamond, Calif. plant of Macco Corp., where the material is dried and ground in Raymond mills. Rosamond is about 70 miles north of Los Angeles. Incidentally, at the Rosamond site the company

also operates a clay plant for preparing drilling mud for the oil industry.

These Raymond mills feed in parallel to three Denver diaphragm jigs. In each jig there are two compartments each about 30 in. wide and about 3 ft. long or a total flow length of about 6 ft. The crushed ore is fed to the upper end of the jig along with adequate water. A bed of shot about 1 in. deep is kept on top of the screen.

The concentrates are drawn continuously from the jig's hutch to a Denver rake classifier that acts as a de-watering unit. Tailing or rejects from the jigs fall to a Wemco spiral de-watering unit. A Caterpillar tractor pushes both "cons" and tails towards separate storage areas. The concentrates are trucked to Rosamond with loading being done by the same front-end loader that unloads the ore trucks. Later a screw is to be installed to store the concentrates on the ground.

**The plant has a capacity of 25 tph.** with recoveries in the 60 to 65 percent range. The tailing rejects are sold to the Inyo-Kern military establishment for air strip uses. Belt conveyors are by Link Belt Co. and Stephens-Adamson Mfg. Co. The overflow from both the Denver rake and the Wemco spiral is practically clear water and is pumped to a storage pond by a Denver centrifugal sand pump.

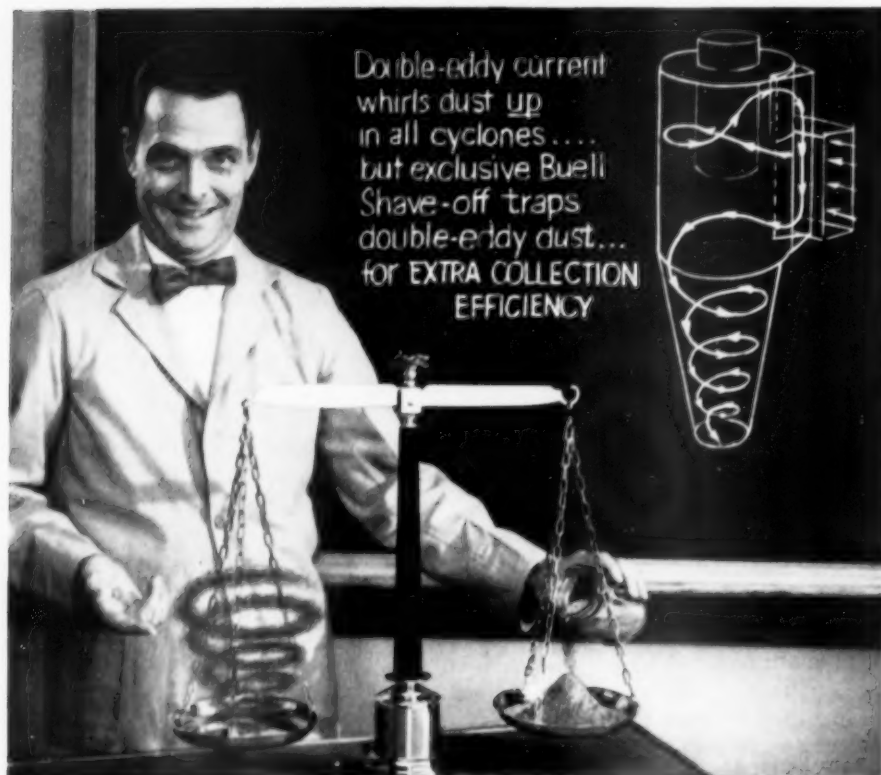
The jig is a simple and time-tried device for concentrating relatively coarse material. Separation is based on differences in specific gravity between the valuable portion and the rejects. Jigs have been in use in the metal mining plants for many decades and more recently have been installed in some gravel plants to remove lighter, deleterious materials from the pit-run gravel.

The principle of the jig operation can be seen from the line drawing. A loosely fitting piston, (A), operates vertically and at strokes in the 200 rpm. range. The Denver jig uses a rubber diaphragm. An eccentric on the drive assembly causes the piston to function. Where a piston-type as shown here, is used, the piston is usually just under water. Ore is fed to the compartment (C) with an excess of water. The vertical movement of the diaphragm or piston cause the pulp in that compartment to pulsate vertically as shown by the arrows. The bottom of this compartment (C) is a screen that is of proper size to allow the coarsest concentrate particles to go through it.

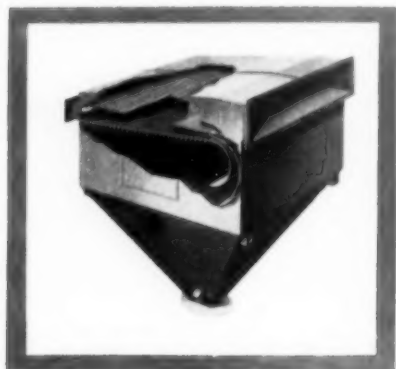
Often coarse shot forms a bed on top of the screen. As the pulp flows towards the reader the pulsations keep the material very loose so that the heavy mineral pieces can settle and go through the screen into the "hutch," and the lighter pieces flow out of the jig. Horsepower requirements are very low but the tonnage handled per hour is

*Please turn to page 190*

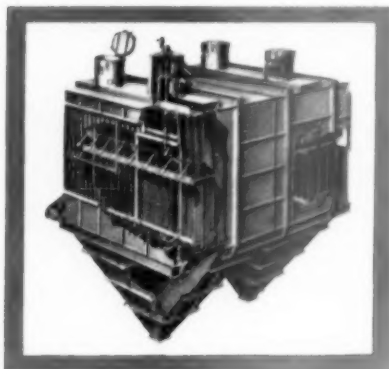
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**Overall view of plant.** Primary crusher and truck-dump hopper are out of picture to the left. Short inclined conveyor, foreground, forms closed circuit with secondary screen and crusher, right. High belt conveyor extending to left carries excess sand to stockpile area.

## THE PROBLEM:

Although built on the same glacial deposit near an old location, this sand and gravel plant discovered that the amount of fines in new pit are higher than at old location

## THE SOLUTION:

By DAVID O. MOCINE

To solve the problem, Bichler Bros. Co., near Escanaba, Michigan, inserted two screens with  $\frac{1}{8}$ -in. rectangular openings in the chute taking discharge from the third deck of the final minus  $\frac{1}{4}$ -in. vibrating screen. This both up-graded the minus  $\frac{1}{4}$ -in. sand and made a pure mason sand available. One or both of these screens can be placed in use, depending on the amount of fine sand to be bled from the sand line. To keep these chute screens from blinding, an electric vibrator has been mounted on the chute.

Final separation in this plant is afforded by a 4- x 12-ft. Hewitt-Robins vibrating screen mounted over six permanent concrete bins of 60-cu. yd. capacity each. Plus  $\frac{1}{2}$ -in. stone is scalped off on the top deck and is discharged to either of two bins. A 100-ft. centers overhead 18-in. conveyor belt stockpiles the stone in excess of bin capacity in a pile south of the plant. Sand, minus  $\frac{1}{4}$ -in.,



**Three-quarters cu. yd. dragline** recovering material from pit located on glacial deposit.



One of two  $\frac{1}{8}$ -in. screens used for bleeding off excess fine sand. Note vibrator that prevents clogging of screens in stationary chute

## The solution

*Continued . . .*

and plus  $\frac{1}{8}$ -in., is treated in the same manner as stone, with the conveyor belt for surplus extending to the north. This belt is equipped with a movable unloader that makes it possible to stockpile sand in an area nearly 200 ft. long. Under this pile a reclaim conveyor belt operates in a tunnel for use in loading trucks. Mortar sand produced beyond bin capacity is flumed to a storage area at the east side of the plant. Plus  $\frac{1}{4}$ -in. oversize from the second deck is chuted to one of the 60-cu. yd. bins.

Sand and gravel is dug from the pit by a  $\frac{3}{4}$ -cu. yd. P & H dragline which loads 8-cu. yd. dump trucks for the average 800-ft. haul to the primary crusher. These trucks dump into a grizzly-covered hopper over a Hewitt-Robins vibrating scalping-feeder. Oversize plus  $1\frac{1}{2}$ -in. material is chuted to a Cedarapids 18- x 36-in. jaw crusher while through-screen material from the feeder falls directly to an 18-in. belt to form a cushion for the minus 2-in. discharge from the crusher.

This belt discharges to a Tel-smith 4- x 8-ft. double deck vibrating screen. Oversize from the top deck, plus  $1\frac{1}{2}$  in., is chuted to a 36-in. Tel-smith Gyrosphere set for  $1\frac{1}{2}$ -in. discharge. This material falls to a 24-in. transfer belt which delivers it to the first conveyor belt to form a closed

circuit. Undersize from this screen, minus 1-in. stone, is delivered by an inclined belt to the final screen located over permanent concrete bins.

Minus  $\frac{1}{4}$ -in. sand is chuted to twin Eagle dewatering screws located directly under the screen, and it is this screen which provides the mason sand. Mason sand is dewatered by a Tel-smith single screw, with sand from both screws falling to bins or to the stockpile area. A 6-in. dia. x 16-ft. long corrugated culvert, sunk vertically to a point 25 ft. below grade, provides plant water, which is pumped by a 1,000 gpm. Allis-Chalmers unit.

Yard and delivery equipment includes eight dump trucks ranging from 4- to 8-cu. yd. capacity and a semi-trailer of 10-cu. yd. capacity. The company uses a Hough Payloader for clean-up work around plant and stockpiles; a  $\frac{1}{2}$ -cu. yd. clam shell for reclaiming stockpiled stone; and a  $\frac{1}{2}$ -cu. yd. shovel in some areas of the deposit.

Harold Gassman is manager of operations and partner in the firm and Ray Nolde is plant superintendent. Bichler Bros. commenced operations soon after the turn of the century with a quarry that produced coursing stone, building stone and crushed aggregate. This new plant is the fourth one to be erected.

END

# Turn Waste Piles of Limestone into Premium Chips and Ag-Lime



Does the problem of "too many chips in the fines and too much fines in the chips" give you a screening "headache"? Or worse, does it result in waste of what could easily be two premium products?

Many limestone producers have found the Symons V-Screen to be the efficient, economical solution to their fine screening problems . . . and many have made premium products of clean chips and ag-lime—even from waste piles of years' accumulation.

This is made possible because an entirely new screening principle gives the Symons V-Screen unequalled high capacity for sharp single cut separations, especially in the more difficult to screen finer sizes. The screening principle employs controlled diffused feed and vertical flow of material with a low rotary speed and high speed gyratory action, combining centrifuge and gravitational force.

*Clip and mail the coupon for full details.*

**NORDBERG MFG. CO. • Milwaukee, Wis.**

## NORDBERG

MACHINERY FOR PROCESSING ORES and INDUSTRIAL MINERALS

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SYMONS . . . A REGISTERED NORDBERG TRADEMARK KNOWN THROUGHOUT THE WORLD

### SPECIFIC EXAMPLES:

Here are a few typical examples of Symons V-Screen performance on fine screening operations in limestone:

- Screening out chips from 600 tons of crushed limestone per 10-hour day. Screening with  $\frac{1}{8}$ " square mesh opening, operator is getting about 40 tons per hour of  $\frac{1}{8}$ " and 20 tons per hour of clean  $\frac{1}{16}$ " chips. Even though feed is quite moist at times there is no blinding.
- In a similar operation, a 7 mesh square opening of .096" is used on V-Screen to remove fines from  $\frac{1}{4}$ " top size limestone chips. Product is exceptionally clean and stainless steel screen cloth has lasted an entire season.

Mail this coupon for the complete story on Symons V-Screens.

NORDBERG MFG. CO.  
Milwaukee, Wis.

Please send me a copy of the new Symons V Screen Bulletin 243.

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**Aerial view** of Arkansas Limestone Co. operation showing four mine entries above center. In foreground, belt from hammermill to loading chute

# **SUCCESS—how one company achieved it**

The key: efficient, well engineered plant; use of high production machinery



Mine entries at early stage of operations

**E**FFICIENT AND BOLDLY ENGINEERED plant and quarry layouts, high production machinery and an exceptionally rich grade of limestone keep the Batesville White Lime Company and its subsidiaries going at top speed. The parent company is located at Batesville, Ark., and concentrates on producing pebble lime, hydrated lime, quicklime and agricultural limestone. It also operates a one rotary kiln lime plant at Cleburne, Texas, and is adding a second rotary kiln at that location.

A subsidiary, Arkansas Limestone Co., supplies all the limestone requirements of the Reynolds Metal Co. plant at Bauxite, Ark., while Love Hollow Limestone Co. ships its entire output to the Bauxite, Ark. plant of the Aluminum Co. of America. Both subsidiaries operate in the vicinity of Batesville. Arkansas Limestone Co. gets its stone from an underground quarry producing 400,000 tons each year. The Love Hollow Limestone Co. has an open pit quarry, 20 miles from Batesville, producing 360,000 tons annually.

The quarry from which the parent company obtains the stone for its lime plant is at Limesdale about 7½ miles north of Batesville. The overburden of clay and chert ranges from 10 to 35

ft. in thickness. This is removed with a Model L-72 Lorain 1¾ cu. yd. shovel and taken to the mud dump in Euclid 15-ton end dump trucks.

**There are two faces in this quarry.** One 50-ft. face yields fine-grained stone and the other is a 40-ft. face of coarser grained rock. Both types of stone average better than 98 percent calcium carbonate. Six-inch blast holes are bored with a model 56 BH rotary drill operated by a Chicago Pneumatic 600 air compressor. The drill rig is powered by a GM 371 diesel engine.

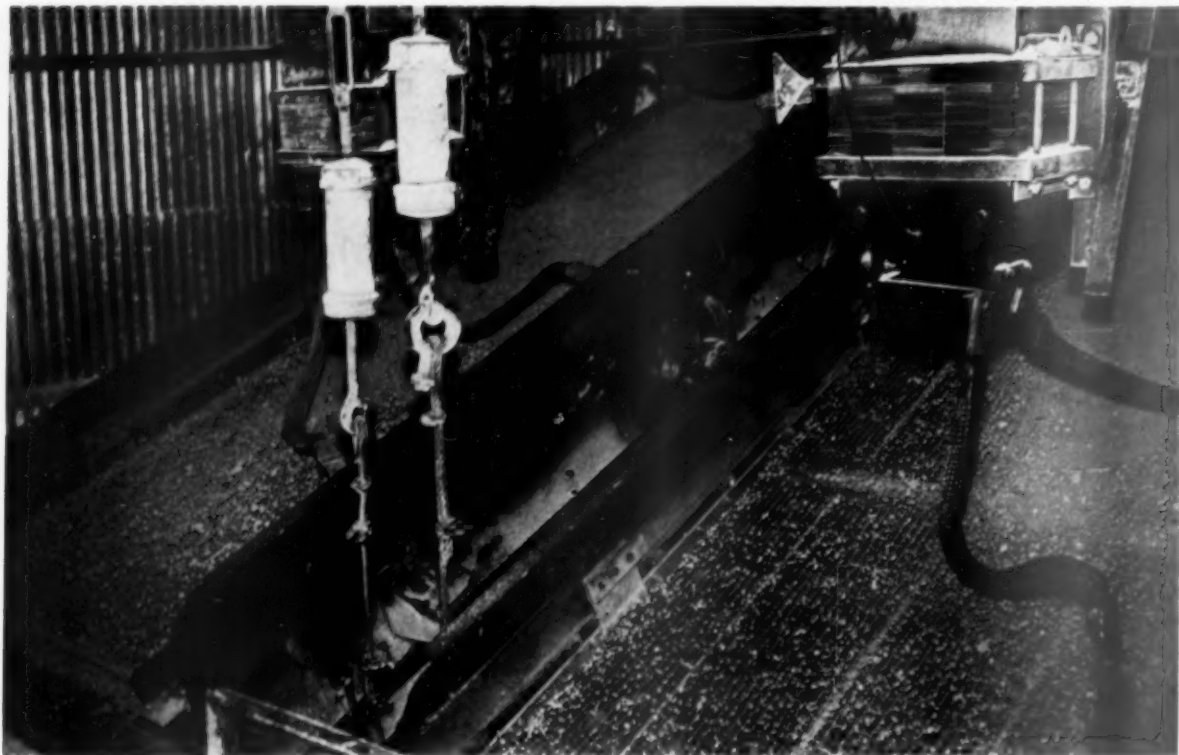
Blasting is done about once a month. With 20 to 22 blast holes extending 2 ft. deeper than the face being shot, an average of 20,000 tons of stone is blown down by each shot. Holes are loaded with 100 to 150 lb. of 60 percent dynamite and approximately 125 lb. of 40 percent. Holes are loaded to within 12 ft. of the top. Instead of secondary blasting to break up large pieces left after a shot, a 4,000 lb. drop ball swung by a Model LH Lorain crane is used.

The rock is loaded on Euclid 15-ton end dump trucks by a Model 38-B 1½-cu. yd. Bucyrus-Erie

*Please turn to page 133*

# PRODUCTION UP 35% WITH 2 SECO SCREENS

AT GEORGIA LIMEROCK CO., PERRY, GEORGIA



## GEORGIA LIMEROCK NOW GETTING MORE UNIFORM PRODUCT

How would you tackle the job of screening a soft, calcareous lime that is very sticky due to moisture content? At Georgia Limerock, two SECO electrically heated screens, purchased through Merts Equipment Company at Albany, Georgia have solved a problem which this operator had previously thought insolvable.

In the first place, the production of finished product has been increased by approximately 35%. The SECO screens with electric wire cloth heater units are so efficient that the damp, sticky, soft material gets through the meshes with little or no carryover of fines. (Note the discharge ends of the screens in the photo above.)

As important as this increased production is, even more important to Georgia Limerock is the more uniform finished product they are now able to sell their customers. They know, as you know, better products build better businesses.

*Send for Catalog No. 204*

**SECO**  
TRUE CIRCULAR ACTION  
VIBRATING SCREENS

### Don't Let A Sticky Screening Problem Rob Your Profits!

Whether it's ag-lime, sand, or any other material, SECO engineers welcome the opportunity to help you. SECO builds over 350 single, double, triple and three and one-half deck models. Write, wire or phone.

**SCREEN EQUIPMENT CO., INC.**  
Buffalo 25, N.Y.

## Batesville Lime Co.

*Continued from page 131*



**Drilling blast holes** in mine face 800 ft. from entry

shovel. Four of the Euclids are in use with a fifth kept in reserve. These Euclids take the rock one-half mile to a screening hopper and wobbler feeder made by Universal Engineering Corp. which takes out minus 4 $\frac{1}{2}$ -in. sizes, which drop to a 30-in. belt. The remainder discharges into a 32- x 40-in. Cedarapids jaw crusher which reduces it to minus 5 $\frac{1}{2}$ -in. The material then goes to a 4- x 12-ft. single deck Cedarapids screen which takes out the minus 2-in. size and passes it to an 18-in. conveyor belt 50-ft. long to a surge pile over a reclaiming tunnel. The plus 2-in. stone is elevated on a 30-in. belt conveyor discharging to one of two stacker belt conveyors, which pass it to the surge pile over the recovery tunnel.

From this point the material goes through a second 4- x 12-ft. Cedarapids screen which takes out minus 4-in. size. Plus 4-in. material goes by belt conveyor into one compartment of a 600-ton loading bin from which it is taken to the fine limestone plant. Here it is fed into an Allis-Chal-

mers No. 16 gyratory crusher which reduces the material to 1 $\frac{1}{4}$ -in. size. The material then passes through an Allis-Chalmers rotary screen which takes out the plus 2-in. size and separates the 2-in. material into sizes from 2-in. to  $\frac{3}{4}$ -in. and down to dust and deposits it in a four-compartment bin. The plus 4-in. stone is loaded from the 600-ton bins into Koppal cars carrying 50 tons per train of 20 cars. Diesel locomotives, one a Plymouth and other a Whitcomb, pull both the Western cars and the Koppal cars.

All belt conveyors at the quarry installation are made by Barber-Greene as are the stacker belts. The set-up described here will handle 200 t.p.h. The quarry operates one 8-hr. shift seven days per week.

The lime plant of the Batesville White Lime Company has six shaft kilns of a modified Azbe type, 40 ft. high and 18 ft. outside dia. These kilns are gas-fired from a center burner. Temperature range in these kilns is 2100 to 2200 deg. F.

*Please turn to following page*



Limedole quarry of Batesville White Lime Co. showing shovel in foreground. Note crusher at left of center

## Batesville Lime Co.

*Continued . . .*

Approximately 24 hours is required to calcine a charge at the rate of  $4\frac{1}{2}$  tons of stone per hour.

The calcined stone goes by belt conveyor to a Knittel crusher made by Stephens-Adamson where it is reduced to  $1\frac{1}{2}$ -in. minimum pieces. This crusher feeds the crushed material to an Allis-Chalmers vibrating screen. Pieces  $1\frac{1}{2} \times \frac{3}{4}$  in. go from the screen into one of a battery of four pebble storage tanks with a total capacity of 1,300 tons. Pieces  $\frac{3}{4} \times \frac{1}{4}$  in. go to a 400-ton storage tank. The minus  $\frac{1}{4}$ -in. pieces go to a dust storage tank of 800 tons capacity. This fine material is used to make hydrated lime.

There are two Kritzer hydrators. From the hydrators the lime is conveyed to a Raymond mill, then through a Whizzer air separator and finally to a 200-ton hydrated lime storage tank. The hydrated lime is packed in 10-lb. and 50-lb.

bags or shipped in bulk in covered gondola cars. It is sold under the trade name, "Batesville Marble Lime."

**Pebble lime is shipped principally in bulk** in various types of closed railroad cars but is also packed in 100-lb. bags. Batesville Pulverized Quicklime is shipped in 50-lb. bags.

Batesville agricultural limestone is made to meet all Arkansas state specifications. It is shipped in bulk cars or in 100-lb. bags. Batesville 200-mesh limestone is ground on a Raymond Model 5 high-side roller mill and finished in a Whizzer air separator. This limestone is shipped in trucks and open hopper cars and is also packed in 80 and 100 lb. bags.

The Love Hollow Limestone Company's quarry is located on a 1,000 acre tract of land in Izard County about 20 miles northwest of Batesville.

*Please turn to page 192*



## Precious Jewel of Industry's Future

"Black Diamonds" are America's most valuable resource for today and tomorrow! Only Bituminous coal can fully meet industry's needs for more electrical energy and more plant-power.

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## In Secondary Blasting, why be the goat?



## ... when you can play-it-safe with *Quarrycord*

You play-it-safe three ways when you use safety fuse and Quarrycord in your secondary blasting:

1. You can ignite each and every fuse *from one remote point* and eliminate the hazard of men climbing over the rock pile.
2. You gain the advantage of *fuse blasting* — "pop-pop-pop" instead of "boom!"
3. You fire when ready, without danger from stray electrical currents from equipment or thundershowers.

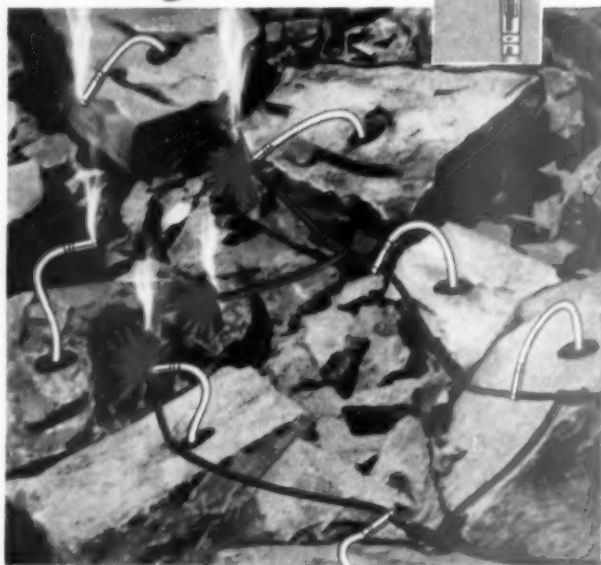
Quarrycord looks like colored twine. It is soft, pliable — easily lighted with a match and burns with an open flame at the rate of about one foot per second.

It's easy to use. Cut your safety fuse in equal lengths. On the end of the fuse opposite the cap place a Quarrycord Connector. This is a copper tube containing an ignition compound. The end is slotted to hold the Quarrycord securely.

After loading the holes, connect each fuse with Quarrycord, and make cross connections wherever a short cut will get the flame to the fuse in less time.

Run the end of the Quarrycord to a place where it can be lighted easily — light it with a match and go to a place of safety.

Enter 1457 on Reader Card



*This folder tells the whole story: what Quarrycord is, how to use it and what it can mean to you in greater safety and lower costs in secondary blasting. We have a copy waiting for you — it's free.*

For more information see your explosives supplier or write to

Q-1

### THE ENSIGN-BICKFORD COMPANY

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**AUTOMATIC DRIVE**—Hyster Co. has issued Form 1481 describing Hystamatic Drive for Hyster 30, 40 and 50 lift trucks. Another leaflet, Form 1330C, discusses the Hystamatic drive as a feature of Spacesaver models 30, 40 and 50 lift trucks.

Enter 715 on Reader Card

**BATCH PLANT**—The Conveyor Co. has issued Catalog P495 describing the Conveyor 1½ cu. yd. batch plant. The truck-transported plant moves on the road in four units: recirculating cement silo; operator's section; aggregate bin section; and aggregate bucket elevator. Designed for truck mix and dry batch operations, the unit is described in text, photos and diagrammatic layouts.

Enter 716 on Reader Card

**BLOCK MACHINE**—Lith-I-Bar Co. has issued Form 603, describing its hydraulic- or air-powered Lith-I-Block machines. Four models described are the A 236 and H-236, two-block machines, and the A-310 and H-310, three-block machines. Construction and operating data, machine components and specifications are included.

Enter 717 on Reader Card

**CARBIDE BLANKS**—General Electric Co., Metallurgical Products Department, announces Publication GT-314, a new price list covering made-to-order semi- and modified standard Carbonyl cemented carbide blanks as well as solid cemented carbide cylinders.

Enter 718 on Reader Card

**CHEMICAL PRODUCTS**—The Solvay Process Division, Allied Chemical & Dye Corp., has released "Solvay Products Book," which gives data on uses, markets, physical and chemical properties, packaging, handling and storage of the entire line of Solvay alkalies and chemicals.

Enter 719 on Reader Card

**COMBUSTION ANALYZER**—Bailey Meter Co. has prepared a four-page product specification, E65-S, which describes the "Heat Prover" combustion analyzer, designed to indicate percentage by volume of oxygen and combustibles present in exhaust gases from boiler and industrial furnaces.

Enter 720 on Reader Card

**CONCRETE FORM TIES**—Universal Form Clamp Co. has issued Catalog 160 listing selection data on its concrete form ties and accessories; concrete building specialties; reinforcing bar supports and road dowel bar supports and accessories.

Enter 721 on Reader Card

**CONVEYOR IDLERS**—Chain Belt Co. has prepared 61-page Bulletin 56-80 on its Rex-Rated belt conveyor idlers. Covering the entire line, the idlers are listed in four classifications: Series 1000 for moderate service; Series 2000 for standard service; Series 3000 for heavy service; and Series 4000 for super service.

Enter 722 on Reader Card

**COST CONTROL**—The White Motor Co. has brought out its 35th annual edition of the White-Autocar "Cost Record Book." It provides a comprehensive system of analyzing truck operating costs and can be tailored to any truck-using business and any size fleet.

Enter 723 on Reader Card

**CRUSHING PLANT**—Lippmann Engineering Works, Inc. has made available a brochure on the Comanche portable dual crushing plant,

which can be supplied in a 4-size range: Cub, Scout, Warrior and Chief.

Enter 724 on Reader Card

**DETACHABLE BITS**—Atlas Copco Pacific, Inc. announces Form E-573 which describes Sandvik Coromant "776" detachable bits, distributed by the Atlas Copco group of companies for Sandvik Steel Works Co. Ltd., Sandviken, Sweden.

Enter 725 on Reader Card

**DIESEL ENGINES**—Detroit Diesel Engine Division, General Motors Corp., has released Bulletin 6SA46, "Detroit Diesel Industrial Power Units and Fan-To-Flywheel Engines," and Bulletin 8SA55, "1000 Applications of GM Detroit Diesel Engines in Power Equipment."

Enter 726 on Reader Card

**DOOR FRAMES**—The Richmond Fireproof Door Co. has prepared a booklet on its Trim Type steel door frames. Standard details show profile designs, dimensions, and installation data. One section explains how the frames are installed in masonry construction.

Enter 727 on Reader Card

**DUMP TRAILER**—Clement-Braswell, Inc. has released Bulletin 2327 describing its Bonus Loader dump trailers, Models 1610-LH and 2715-TLH, both with hydraulic lift design; and Models 1610-L and 2715-TL of cable-lift design.

Enter 728 on Reader Card

**DUST CONTROL**—Pangborn Corp. has released Bulletin 922, "Dust Control for Industry," encompassing its complete range of dust control equipment and accessories.

Enter 729 on Reader Card

**ELECTRIC HOISTS**—R. G. LeTourneau, Inc. has published Bulletin 401-51, "Electric Hoists for Big Lifts," describing hoists of 3-ton and greater capacities. Features include the inching control, dual braking system, high-torque electric motor, helical gears and low-headroom design.

Enter 730 on Reader Card

**EMERGENCY SERVICE**—General Electric Co. has released Bulletin GEA-6484, "When Disaster Strikes," which tells how General Electric service shops can help speed plant recovery.

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## FREE INFORMATION

You can obtain catalogs and literature listed on these and other pages of the magazine by entering the number appearing either below or beside the item of interest on the READER-SERVICE CARD in this page.

**EXCAVATORS**—Bucyrus Erie Co. has issued Bulletin SE-Line-1, "Get Your Show on the Road with Bucyrus-Erie Convertible Excavators." Models in ½- to 4-cu. yd. capacity are illustrated and condensed specifications are given.

Enter 700 on Reader Card

**EXPLOSIVES**—Explosives Department, American Cyanamid Co. has issued a brochure, "Construction Case Histories," outlining current information on drilling, blasting and excavating methods used by the construction, quarrying and mining industries. The bulletin unfolds into a three-page chart presenting 48 studies in condensed data form.

Enter 701 on Reader Card

**FIREBRICK**—J. H. France Refractories Co. has released Bulletin 551 on its line of firebrick, high alumina and special Corindon brick. Technical data is listed in seven tables, and recommendations are given for specific industrial applications, including cement and lime plants.

Enter 702 on Reader Card

**HOISTS**—Gar Wood Industries, Inc., St. Paul Division has prepared Form W-182, detailing design features of Gar Wood-St. Paul medium duty dump bodies and arm-type and direct-lift hoists. Another release, Form W-197, describes off-highway hydraulic hoists of both arm- and telescopic-type.

Enter 703 on Reader Card

**KILN CLOSURES**—Universal Door Carrier, Inc. has brought out two brochures on its kiln closure equipment for concrete products plants. The first features Universal's curing room door, enumerating advantages and showing several typical installations. The second leaflet describes Uni-Seal kiln door gasket, Uni-Seal rubber-to-steel cement and Uni-Coat rust preventive coating.

Enter 704 on Reader Card

**LOCOMOTIVES**—General Electric Co., Locomotive and Car Equipment Dept., has released Booklet GEA-6445, "Six Questions To Ask When Buying an Industrial Locomotive," a guide to purchasers of industrial haulage equipment.

Enter 705 on Reader Card

**MASONRY SAW**—Clipper Manufacturing Co. has prepared Form 2017 on its Supermatic masonry saw, featuring the Sta-Level cutting head and Hi-Lo control wheel. Four-color illustrations supplement the text.

Enter 706 on Reader Card

**MASONRY SPLITTER**—E & R Manufacturing Co. has prepared a bulletin on its portable non-hydraulic masonry splitter, "Elmer's Little Helper" Model SB 9. Features presented include eccentric roll bearing power, removable 16-in. rule and square and extension table. Other promotional material is devoted to Model CM 12 with Contour-A-Matic and to a larger machine, "Elmer's Big Helper" with Contour-A-Matic.

Enter 707 on Reader Card

**PORTABLE SCALPING PLANTS**—Lowa Manufacturing Co. has released Bulletin Unit 4 describing its portable intermediate scalping plants designed to fit between portable primary crushing and secondary crushing and screening plants, providing intermediate crushing and scalping of unwanted fines and dirt. Five models are featured, with three crushers: twin jaw, roll and Symons cone crushers.

Enter 708 on Reader Card

**PULLING DEVICE**—Princeton Grip-Hoist, Inc. has prepared a brochure featuring the Grip-Hoist Tirfor, a portable, multi-purpose hoist or pull unit. The 42-lb. device is rated at 3,300 lbs. single line pull, and is designed to handle block and tackle of 6 tons and more. Time and labor-saving advantages are emphasized.

Enter 709 on Reader Card

**REINFORCING BARS**—Adrian Peerless, Inc. announces Bulletin 200 on Wal-Lok masonry reinforcement. Pull test, side pressure test and shrinkage crack test data obtained by the University of Toledo are included, as well as applications and specifications.

Enter 710 on Reader Card

**ROTARY COMPRESSOR**—Ingersoll-Rand Co. has released Form 2307 featuring the 85-c.f.m. Gyro-Flo portable rotary compressor, driven by a Continental Motors F-140 gasoline engine.

Enter 711 on Reader Card

**ROTARY DRYER**—Carco Manufacturing, Inc. has prepared a single sheet bulletin, RDB-101, giving design, construction and other details of the new dual-flow rotary dryer. Two models described are RD 1020, designed to evaporate 200 lb. of water per hour, and Model RD 1430, evaporating 400 lb. of water per hour.

Enter 712 on Reader Card

**SAND, GRAVEL MACHINERY**—Denver Equipment Co. has issued a 20-page bulletin, G3-B50, describing its latest machinery for the sand, gravel and quarry industry, including improved crushing, grinding, screening, classifying, materials-handling and portable machinery. Denver laboratory services are outlined.

Enter 713 on Reader Card

**UNLOADER**—Waterloo Unloader Corp. has issued a bulletin on the Iowa Unloader for concrete products plants. Designed for side or rear unloading of cubes, pallets, steps, tile, tanks, etc., the unloader is pictured in action, and engineering features also are illustrated.

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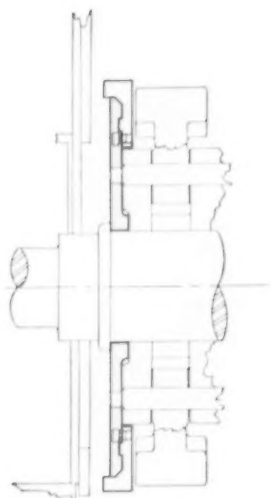
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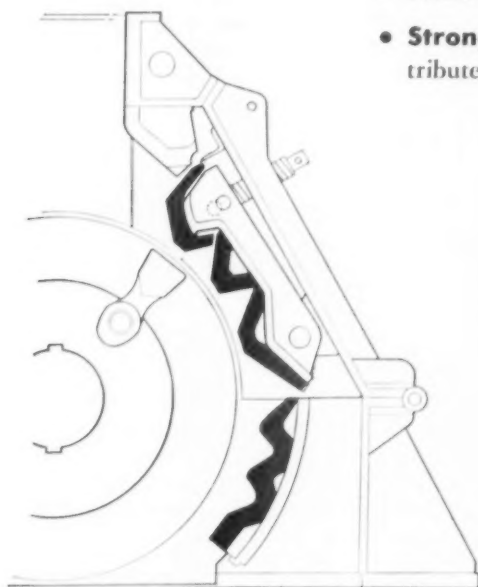
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# No other **IMPACTOR** gives you All these features



Showing renewable liners on end discs.



Dotted lines show adjustment range of breaker blocks toward hammer circle. Where needed bottom blocks can be made adjustable also.

Pennsylvania originated the Impactor nearly twenty years ago and has been improving it ever since. Listed here are some of the improvements that you get in today's Pennsylvania Impactor, features that have been arrived at through constant on-the-job study and development by Pennsylvania's engineers and the cooperation of users.

- **Renewable Liners** on end discs are replaced when worn, instead of entire disc, reducing maintenance costs. Since liners rotate with the discs wear on end hammers is much less than if liners were stationary. Can be replaced without removing rotor.
- **Built-In Fly Wheel**—heavier discs on rotor give fly wheel effect eliminating need of external fly wheel.
- **Extra Heavy Shaft** not exposed to wear.
- **Oversized Antifriction Tapered Bearings** mounted on tapered section of shaft. Bearings are leveled and rest on a machined surface.
- **Frame** protected by liners over entire interior surface.
- **Stronger Hammers**—eyes designed after careful study of distributed stresses based on photo-elastic tests.
- **Adjustable Breaker Blocks** (pat. apld. for) keep product uniform and at maximum tonnage during entire life of hammers and blocks. Special design of Block contour gives maximum impact reduction—cubical product. No exposed fastening members.

Ask for bulletin that gives complete details of these and other features.

## PENNSYLVANIA

Thousands of crusher installations plus 50 years experience designing and developing size reduction machinery makes our engineering staff an outstanding group to consult with on crushing problems.

**PENNSYLVANIA CRUSHER DIVISION**

Bath Iron Works Corporation • West Chester, Penna.



Front view of Calaveras Cement Co.'s new office. The company's own products were used to build most of the structure.

# The NEW LOOK comes to a cement plant

By WALTER B. LENHART

**T**HE NEW LOOK HAS COME to San Andreas. Calaveras Cement Company, long a leader in the pioneering of new techniques in the cement industry, has spent large sums of money during the past year for more efficient and better working conditions for its staff. New buildings and rearranged old ones have helped to make this one of the most modern plants on the west coast.

Meanwhile, the firm has continued its experiments in production and control, with encouraging results. It was founded by prominent and experienced mining engineers, and mining men still hold practically all the important staff posts, from the president, William Wallace Mein, Jr., down to many of the key operating men.

The new office building for the managerial and accounting departments houses the chemical and engineering section in well-lighted private offices, conference rooms and a spacious and attractive lobby. With the exception of the entry-way, the building has no windows, with light coming from fluorescent ceilings.

The laboratory has direct lighting, rubber-tiled floors, air conditioning and radiant heat. The walls and ceilings are of precast tilt-up construction made from the company's own products. A new machine shop, garage and warehouse, as well as several other structures, have been built. The re-

*Please turn to page 142*

# 40 TO 400 MESH OUTPUT UPPED AS MUCH AS 300%



## ENGINEERING AIR SEPARATORS TO SPECIFICATION

... comes naturally to Sturtevant engineers. They have a tradition of success in developing dry-processing equipment and plants for more than 75 years — from the first rock emery mills to the most modern fluid jet micron-grinding equipment. If your problems include any of the processes listed in the coupon, it will pay you to investigate.

## WHAT CAN A STURTEVANT AIR SEPARATOR DO IN YOUR PULVERIZING SYSTEM?

In the cement industry, Sturtevant Air Separators have a tested record of increasing mill capacities from 25 to 300% while lowering power consumption as much as 50% — when used in closed circuit with grinding mills. Maybe they can do as well for you.

Easily adaptable to your materials. Sizes of Sturtevant Air Separators range from 3 to 18 feet in diameter. They deliver fines from 40 to 400

mesh at rates as high as 100 tons per hour.

**Designed to cut costs!** Sturtevant Air Separators are built for a lifetime of low-downtime service. Rugged construction plus easy accessibility for quick maintenance (typified by the "OPEN-DOOR" design in other Sturtevant equipment) assures more output per machine-year. Check the coupon for more information.

## STURTEVANT

### Dry Processing Equipment

The "OPEN-DOOR" to lower operating costs over more years

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STURTEVANT MILL COMPANY, 102 Clayton Street, Boston 22, Mass.

Please send me your bulletin on Air Separators  
Also bulletins on machines for:

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| <input type="checkbox"/> MICRON GRINDING     | <input type="checkbox"/> SEPARATING  | <input type="checkbox"/> BLENDING    |
| <input type="checkbox"/> SUPERFINE SELECTING | <input type="checkbox"/> GRANULATING | <input type="checkbox"/> CONVEYING   |

My dry process materials are \_\_\_\_\_  
Desired capacity is: \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_  
Firm \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

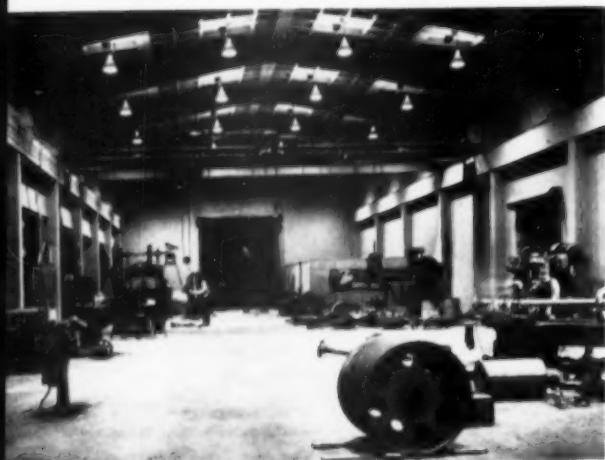
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A corner of the engineering section

## New look in a cement plant

*Continued from page 140*



The shop has "egg crate" ceilings of precast concrete. The pillars or pilasters and arch are all one piece, reinforced concrete and precast on the site.

pair shop also has precast, tilt-up panels of Calaveras cement concrete. Each pair of pilasters and the arch between them was cast in one piece and lifted into place. In casting the pleasing ceiling panels, the concrete was poured over corrugated paper boxes, treated with a plastic material and placed open end down on the casting floor. The office and other buildings were designed by Cline-Zirkel of Berkeley, Calif.

Major additions to the plant were the eight new 36 x 100-ft. silos, built by the McDonald Engineering Company; a fifth Allis-Chalmers kiln measuring 360 x 11 ft. 3 in., three new slurry blending tanks, and a new final (tertiary) crushing plant featuring a 5½-ft. Tel-smith gyrosphere crusher ahead of which are two 5 x 12-ft. Tel-smith vibro-king screens with ¾-in. openings. A Western Precipitator Company electrical unit was installed along with the new kiln. Other additions are: a P & H clinker crane, a 9 x 25-ft. Marcy finish mill, a 9 x 9-ft. Marcy preliminator on the raw end and an 8 x 12-ft. Marcy rod mill that acts as a preliminator on the finish side.

The use of a rod mill for a preliminary grinder is the first this writer has encountered in any cement

*Please turn to page 144*



**Your Wickwire Rope Distributor  
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... a helpful team**



This sales engineer—an expert on the selection, installation and maintenance of our products—is with your Wickwire Rope Distributor every time he makes a call

True, sometimes he's hundreds of miles away, working in the field or at the mill. Yet, even if he's not there in person, your Wickwire Distributor has the full assurance that sales engineers such as this one are *always* quickly available to help you.

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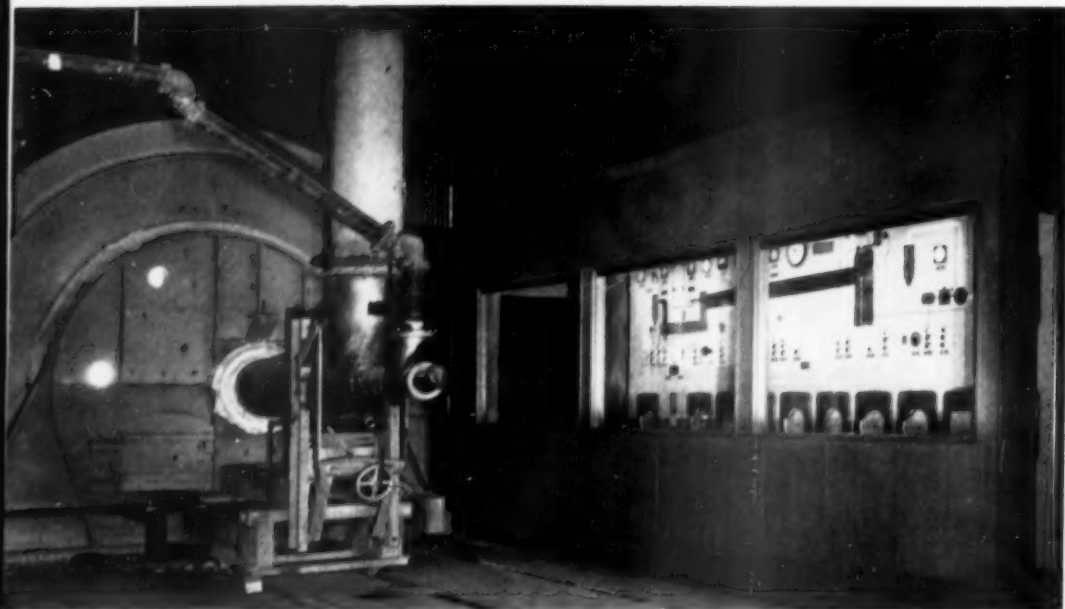
A PRODUCT OF THE COLORADO FUEL AND IRON CORPORATION

ROCK PRODUCTS, April, 1957

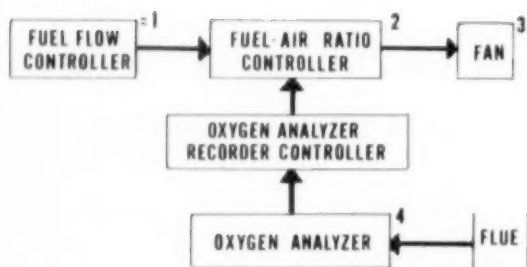
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4086

143



Fire end of fifth kiln. At right is the control panel for the kiln and a portion of the Formagraph can be seen through the window. Practically all the upper half seen through the glass is the Formagraph.



## New look in a cement plant

*Continued from page 142*

plant. The mill is a standard open end unit and has a preeliminating capacity of 500 bbl. per hour of clinker. The finished material from the rod mill shows two percent remaining on the eight-mesh screen and no four-mesh or larger oversize. The mill uses a 450-hp. motor and delivers to bins ahead of three re-grind mills. The mill is loaded with 3-in. dia. rods. At the time of inspection the unit had been in service only about 30 days, so no wear data are available. The operators appear to be well satisfied with the rod mill's performance.




In the raw grinding end another first has been initiated. This is the use of Krebs (Equipment Engineers, Inc.) liquid cyclones in the grinding circuits. There are four 24-in. Krebs cyclones in use; two each on the two circuits. In the older grinding set-up a rake classifier, plus a bowl-classifier were used. The bowls are now out of service. The rake classifiers are still in use in close with the preliminators. The "clones" have been in use long enough to prove to the operators their worth. They report that use of the clones takes only about 15 percent of the capital cost of the former classification system, 10 percent of the floor space, 62 percent of the horsepower and 26 percent of the water previously used. The operation of the cyclones is simple to use and maintenance after a year has been negligible.

Another outstanding feature of the Calaveras operation is the "Formagraph" or graphic panel for centralized control of kiln operation. A number of miniature and standard type indicating and recording instruments are mounted on a panel, giving a "picture" of the entire process. All of the signals from measuring instruments located throughout the kiln are sent to the graphic panel where they are indicated and recorded. Adjustments and settings for the automatic control equipment are made here. The panel was developed

*Please turn to page 196*

# MATCH IDLERS TO THE JOB

... **LINK-BELT** can meet your specific  
load and capacity requirements

IDLER SERIES	TYPE OF IDLER DUTY	TYPICAL APPLICATIONS
<b>NEW 50</b> 	General duty conveyor <ul style="list-style-type: none"> <li>• for maximum loads of 100 lbs. per cubic foot</li> <li>• for moderate lump sizes</li> </ul>	Designed for conveyors carrying medium loads or for installations requiring intermittent operation.
<b>100</b> 	"Round-the-clock work horse" <ul style="list-style-type: none"> <li>• handles all but the heaviest and coarsest materials</li> </ul>	Coal, coke, sand, gravel, iron ores, sinter, taconite, potash.
<b>200</b> 	Rugged heavyweight <ul style="list-style-type: none"> <li>• for continuous service</li> <li>• carries the heaviest and coarsest materials</li> </ul>	Heavy ores, such as iron, copper, etc. . . . on conveyors employing high-capacity belts.



**LINK-BELT SERIES 100 IDLERS** on this 42-in. wide, 218-ft. long belt conveyor carry 800 tph of ore from primary screens to stock pile.

## TO TRAIN YOUR BELTS for proper operation . . .



**BELT TRAINING IDLERS** Left, positive action type trains and protects single direction belts. Actuating disc type at right is best for reversible conveyors. Self-aligning idlers of both types are also available for return run.



**RETURN BELT IDLERS** support the empty belt on the return run.

## TO PROTECT THEM IN SERVICE



**TROUGHED RUBBER CUSHION IDLERS** (right) absorb impact under loading points, when large lumps and heavy materials are loaded on belt. Rubber tread return idlers, at left, simplify handling of tenacious materials.

# LINK-BELT

### BELT CONVEYOR IDLERS

WHETHER you handle cottonseed or coal—Link-Belt makes the exact size and type of belt conveyor idler you need. For top performance . . . lowest per-ton handling cost—see your nearby Link-Belt office or authorized stock-carrying distributor. Ask for Data Book 2416.

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## Soil bank program

*Continued from page 95*

vation practice on it. If it does, it cannot be paid for under the Soil Bank but may receive assistance under the ACP as any other part of the farm may.

**The second part of the Soil Bank**, or Conservation Reserve Program, was allocated \$450 million. Its primary goal is to accomplish some reduction in surpluses, but it is also intended to encourage conservation. To be eligible for this phase of the Soil Bank, a farmer must sign a contract for his land for between three and 15 years. During this period he is paid an annual rental and he can not harvest or pasture this land during the life of the contract. The theory is excellent, but in practice this phase of the Soil Bank is not generally working in the humid sections which are the normal marketing area of the ag-lime industry.

Since I had very strong personal misgivings about the conservation accomplishments of the Soil Bank, I decided to check its application. Last Fall, during my travels, I discussed it with college officials and administrators, at the state and county level in 27 different states. While it was true that the Soil Bank was late getting to the field and that the experience in 1956 therefore does not necessarily indicate the limitation of the Conservation Reserve Program of the Soil Bank, there was one theme running through the comments I heard. The big majority thought that the Conservation Reserve Program was not adaptable to their area and that much more conservation could be accomplished by more adequate funds being available through the A.C.I.

The Conservation Reserve Program is falling down for these reasons: First, the financial inducements to participate are not in line with the restrictions and regulations with which a farmer has to comply. Each farmer must consider the program on whether or not it is sound business for him. He cannot afford, at the current rates of payment, to retire active farm land for the contract period, pay taxes on it and not utilize it. If he does set aside some of his poorest land he usually doesn't put his own money into growing clover or alfalfa that he cannot harvest.

At the hearings before the House Agricultural Committee, and just recently before the Senate Agricultural Committee, there has been much discussion about the shortcomings of the Acreage Reserve Program. At no time during the hearings, however, did a member of Congress, a member of the Administration or a representative of any national farm organization raise one question

about the effectiveness of the \$450 million provided for the C.R.P.

**To confirm my personal views** and objections, I summarized them and sent them to over 1,000 agricultural leaders in all the 48 states. While a few questioned whether we had given the Soil Bank enough time in which to ascertain its effectiveness, a great majority indicated that it would not be applicable to the agriculture in their states. This was not true only in some of the far western areas and those areas in the east where it is practical to plant forest trees. State after state wrote me that less than one percent of their farmers were participating in this phase of the Soil Bank and many states indicated they had less than 100 farmers signed up in the C.R.P.

The President, in his special message on agriculture, requested \$1.3 billion for the Soil Bank for the coming year, with \$450 of this to be earmarked for the C.R.P. To date the benefit to the agricultural limestone industry from these very substantial funds has been less than one percent of the benefit that this industry has derived from the \$250 million in the A.C.I.

In accordance with the policy outlined at our recent annual convention, we therefore plan to raise with the appropriate legislators the question of whether or not the C.R.P. of the Soil Bank should not immediately be re-examined in the light of farmer acceptance and the opinions of the various agricultural authorities. We are going to do this not because we think they should modify the C.R.P. of the Soil Bank for the benefit of the agricultural limestone industry but because we think that it was the intent of Congress to provide a phase of the Soil Bank that would supplement the conservation work being done under the A.C.P. If the C.R.P. of the Soil Bank could be modified either by legislation or by administrative regulation, the agricultural limestone industry could be tremendously benefited.

**Our agricultural authorities** have indicated that we have a need for more agricultural limestone to maintain the soil in good condition. We know that farmers would carry out many more conservation practices if they were not caught in an economic squeeze and if they had more adequate funds. We also know our industry is capable of producing whatever agricultural limestone the American farmer needs.

Whether the potential of the C.R.P. of the Soil Bank could be translated into a practical potential will depend upon Congressional action. In my opinion, without a change in the present program the agricultural limestone industry can only look at the A.C.P. for any additional volume to what it can develop from its own sales efforts.

END

# FOR ON-THE-JOB USE... A HANDY BLASTING GUIDE



A valuable aid in planning your construction and quarry operations, this folder contains data gathered from 48 different projects. It provides, in table form, accurately detailed information pertaining to geology, excavation, drilling equipment, bit performance, drill pattern, blasting data and explosives ratio for each project.

Printed on heavy paper stock, CONSTRUCTION CASE HISTORIES is a handy guide for use at blasting sites. This offer is one more aspect of Cyanamid's Explosives Service, which also includes expert advice and guidance in establishing good community relations prior to blasting. These and other Cyanamid services are all designed with a single purpose; to insure the speed, accuracy and success of your blasting operations.

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## ... CONVERTS 95% of WASTE to USEFUL MATERIAL



Thirty-inch Duraclone handles 12,000 GPM overflow from two Eastern Engineering Sales Companies screw washers.

### 30" DURACLONE ...

... shown above, is operated by a 6-in. Model RU rubber-lined pump, powered by a 25 HP Motor.

DURACLONES are completely rubber-lined and guaranteed to perform as claimed. Sizes from 50 GPM up to 3200 GPM.

DURACLONE installations can be made with a small capital investment and will give efficient, maintenance-free operation without replacement of parts for at least three years.

Eastern Engineering Sales Company, Quincy, Massachusetts, has completed its eighth installation of DURACLONES sold during the last three months.

There is extra profit in the approximately 95% recovery of all useable materials handled through the DURACLONE.

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PROMPT DELIVERY

### H. B. LARGE ENGINEERING COMPANY

262 South Parkwood Avenue, Pasadena, California  
Telephone SYcamore 2-7820

## Public relations program

Continued from page 91

of company triumphs and problems and can share in both.

2. A plant newspaper—even if it's just a mimeographed sheet—should be available to communicate with employees when necessary.

3. Company-wide parties—on the company—help to humanize management and induce a team feeling. Such affairs are most effective when they celebrate some function concerning the company—an anniversary, new safety record, opening of a new building or similar event in which all employees should share before it is opened to the public.

4. An enlightened safety program, emphasizing the saving of human life and limb and administered at least partly by a committee of employees.

5. Incentive programs in the form of performance bonuses, suggestion boxes that pay off in cash and similar device that both recognize and honor individual performance and contributions.

### IV. Community relations

1. Win over your immediate neighbors first. The greatest sense of peace and the worst difficulties can come from the people who live next door to you. You should make every effort to be a good neighbor—by keeping your properties as clean and attractive-looking as possible and trying to hold the nuisance-factors in your operation to a minimum. Then, as in every enlightened neighborhood, you should call on your neighbors or invite them over, explain what you have done or are doing and tell them what they can expect from you. They won't always like it, but they'll respect you for being completely honest, and you will have established a sound basis for getting along with them if it is at all possible. Beautifying your property, offering your neighbors playground facilities or consulting with them on the most effective safeguards against wandering children will help build confidence in you as a good neighbor.
2. Open houses and plant tours are effective methods of explaining your operation and your problems, not only to your immediate neighbors but to the whole community as well. To produce maximum results, however, they should be carefully planned and professionally executed. And their keynote should be complete candor—a "Here I am, look me over and ask any questions" attitude.
3. It is very important that the rock products businessman associate himself in as many constructive ways as possible with local civic and charitable activities. This can counteract

Please turn to page 150

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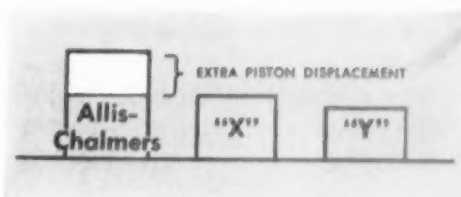
# ALLIS-CHALMERS DIESELS OFFER

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**USABLE**  
power for  
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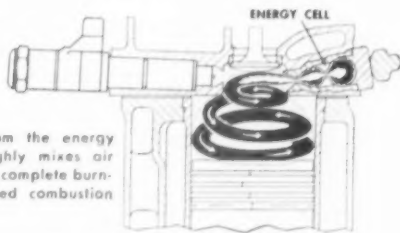
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You have a new kind of engine performance with Allis-Chalmers diesels. Their big piston displacement gives you greater reserve power, higher usable torque in the normal operating range. Their unique "follow-through" combustion results in highly efficient burning — builds up compression pressure slowly, sustains it over a longer period. Result: more *usable* power.



Allis-Chalmers' big piston displacement gives you extra usable power.



A blast from the energy cell thoroughly mixes air and fuel for complete burning, sustained combustion pressures.

Equipment must be *working* to be *earning* — Allis-Chalmers engines earn more because they are on the job working more. Rugged, simple construction, with fewer parts, means a minimum of maintenance. Get the complete story of why Allis-Chalmers engines give you more usable power, more profit. See your Allis-Chalmers engine dealer.

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## ALLIS-CHALMERS



ROCK PRODUCTS, April, 1957

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Call early in the morning or late at night, at his office or his home, and your Plibrico distributor is at your service pronto.

An experienced "pro" on refractories, he intimately knows their application to, and installation in, all calcining, drying, and processing furnaces.

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## Public relations program

*Continued from page 148*

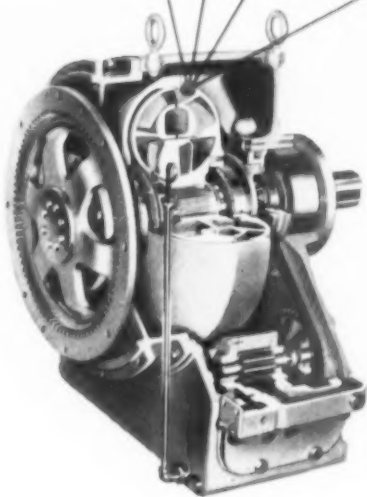
much of the destructive feeling which many citizens may hold toward his operations. Such civic groups usually include the opinion-molders of the community, and it is highly desirable that they be familiar both with you and your problems.

4. Appear, whenever possible, as a speaker before group meetings of any size or shape.
5. Get acquainted with school officials and work whenever possible with young people—by showing them through your plant, meeting with them at school career days, sponsoring their baseball teams and similar activities. These youngsters will soon be adults and their goodwill is an invaluable asset.
6. Try to prevent your trucks from becoming a public nuisance by sending them over different routes, keeping them reasonably clean, avoiding as much spillage as possible, and training drivers to be safe and courteous. To many people, drivers **are** the company; if they make a poor impression, the company suffers.

### V. Customer relations

1. Your drivers also make an important impression on customers. It's difficult to win back the goodwill of a customer who has been offended by one of your driver-representatives. They should realize their importance—and be trained to please the customer.
2. Company vehicles advertise the company—whether you like it or not. **How** they advertise it is up to you. If trucks are clean and well-groomed, are operated safely and courteously, they advertise the company well. And their billboard potential—which is considerable—should be utilized to spread the word about your company and its products.
3. You should cultivate good office habits—an area in which rock products operators in general are not noted for excelling. Telephones should be answered courteously, letters should be answered promptly, bills should be paid immediately, and promises should never, never be made unless you have every expectation of fulfilling them.
4. There are large, easily accessible, professionally produced and relatively inexpensive sources of sales tools, literature and other customer education devices (e.g. motion pictures, posters, displays, etc.) available to all rock products producers. These can be obtained through trade associations (such as the National Ready Mixed Concrete Association, the National Concrete Masonry As-

*Please turn to page 152*



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**That engine will DO MORE,**  
**LAST LONGER with a**  
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You are sure of top engine performance and minimum wear when you use a Clark Torque Converter. Your engine may be operated all the time at its most efficient speed, with power output adjusted to the job's torque demand. And the smooth, steady flow of shockless power eliminates shock loads—reduces strain and wear on all working parts, in engine and power train.

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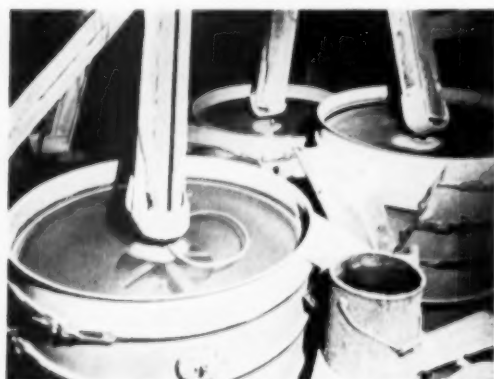
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### Maiden Rock Co. Sizes Sand to 98% Accuracy with Six 48" SWECO Separators

Six 48" diameter SWECO Vibrating Screen Separators are sizing sand into three main classifications - in a process approaching 98% accuracy - for Maiden Rock Silica Sand Company of Maiden Rock, Wis. The accepted commercial tolerance in this area is 85%.

Maiden Rock's sand production is classed as minus 10 plus 30 mesh, minus 20 plus 40 mesh, and minus 40



Close "nesting" of SWECO Separators in screen room of Maiden Rock Silica Sand Company takes minimum floor space. Efficiency of the units is not hampered.

plus 60 mesh. These special size requirements are easily handled by simply changing the screens on the SWECO Separators. Screen life with this abrasive material averages from four to six months and maintenance costs have been considerably less than they were with other screening equipment.

By improving quality and providing the accurate separation its customers require, Maiden Rock has boosted demand for its sand products. The company is replacing all other types of screening equipment with efficient SWECO units that lower maintenance costs and increase production capacity.

### Screening Analysis and Recommendations Available

Your nearby SWECO District Engineer is available to help you with special screening problems. His "know-how" covers over 200 different materials...wet and dry, coarse and fine, heavy and light. He has an 18" Sweco Separator available, to demonstrate in your plant how this equipment can screen your material. No obligation, of course.

A complete data file on screening rock products plus a 22-page catalog are yours for the asking. Write for Bulletin S-107-14.



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## Public relations program

Continued from page 150

sociation, the Portland Cement Association, the National Lime Association, the National Sand and Gravel Association, the National Crushed Stone Association and others), through magazine reprints and through commercial publications prepared for distribution by local producers. These materials are tremendously useful; unhappily they are also not nearly widely enough used.

### VI. Publicity

The popular misconception of publicity based on Hollywood leg art must first be replaced with the solid understanding that here is probably the best means of all to reach the community with an explanation of your problems and operations. Any enlightened businessman, understanding a few basic facts about publicity, can use its techniques both to his advantage and that of the public. Here are a few suggestions along that line:

1. Develop a good, solid contact at your local newspaper, radio and TV station. This may mean simply walking into the establishment, introducing yourself and explaining why you are there. You will be well received. These people are as anxious to get facts right as you are to have them right when they concern you. These contacts should be reactivated periodically, even if you've had no immediate business with the press.

Don't wait until you're in a jam to make yourself known; it may be too late then. Such contacts assure you two things: (1) an individual to call when you have what you consider a legitimate piece of local news; and (2) reasonable assurance that if you come up in the news without your knowledge, someone will know where and whom to phone to check the facts. Don't try to bribe these people or snow them with entertainment. Such efforts will probably hamper rather than help you. Just get and remain acquainted.

2. When you do something newsworthy at your place of business, let the press know about it. Safety award dinners, long employe service records, additional plant capacity, beautifying projects and many similar items of your operation are legitimate news. Tell your local news representatives about it; such publicity can't be anything but helpful.
3. When material appears in national magazines which you feel is pertinent to a local situation in which you're interested, call it to the attention of the local press. Occasionally it may turn into an editorial or a news item.
4. Don't ever feel that you have either the right

Please turn to page 154

# EXPLOSIVES



# RESEARCH



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There's no substitute for the right combination of explosives materials and the "know-how" for getting results that save both time and money. Hercules has specialized in the pioneering of improved explosives techniques for more than 40 years. We will be glad to assist you in selecting the right materials and blasting methods to meet your particular requirements.

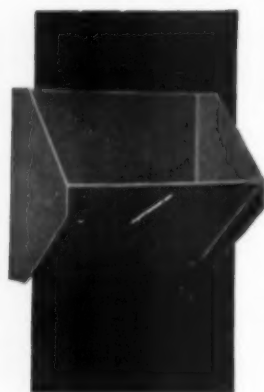
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APR 64

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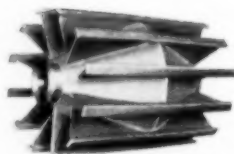


## CONTINUOUS ELEVATOR BUCKET STYLE No. 2

This Standard Bucket provides outstanding service under severest operating conditions. It resists wear—assures longer bucket life and lower operating costs. This style of bucket is typical of the complete line of low-cost, rugged Standard Steel Buckets—available in Salem, Style "A," shelf type and other continuous style buckets.

## STANDARD WING TYPE SELF-CLEANING PULLEY

Specify Standard Wing-Type Self-Cleaning Pulleys when ordering pulleys for your operation. They provide these six cost-cutting advantages—all-steel welded construction . . . lower cost . . . less weight . . . greater strength . . . greater resistance to breaking . . . longer life.



## STANDARD BIN GATE

Material handling costs less . . . is faster, easier and more efficient . . . with this Standard all-steel gear-operated Bin Gate. Other types of Standard Bin Gates also available.

Reduce maintenance and material handling costs by converting to Standard equipment. Write today for catalog showing complete Standard line.



**STANDARD METAL MFG. CO.**  
110 CENTER ST. MALINTA, OHIO

SMI

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## Public relations program

Continued from page 152

or the ability to control the manner in which a story is presented in the press. If you are asked to check an item for facts, do that and nothing more. How it is said is the business of the publication, not yours. Efforts to tamper in this area can only get you into long-range difficulties. When you're tempted, ask yourself how you would like to have a newspaperman come in and tell you how to run your business.

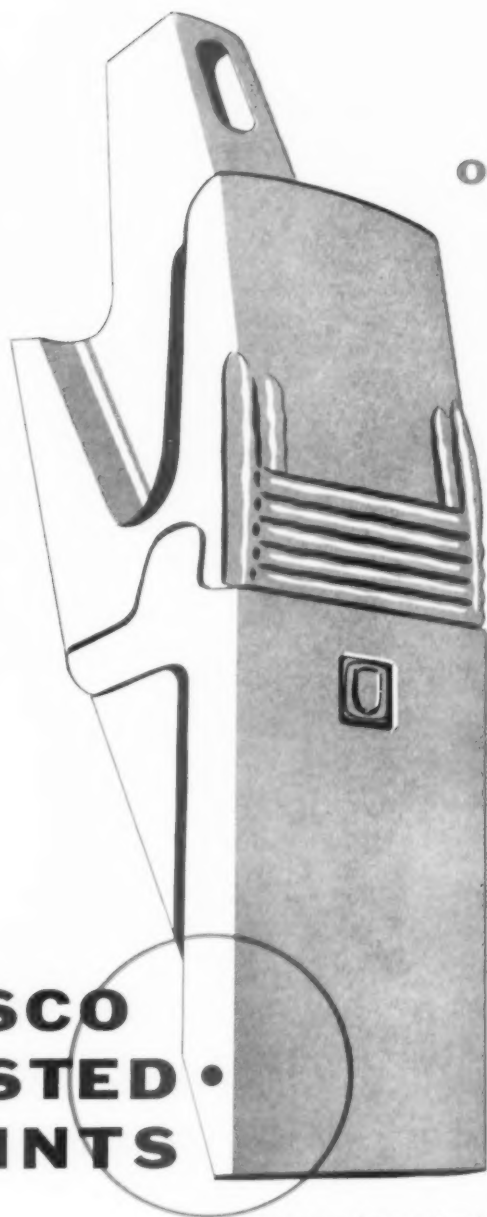
5. Have a firm policy covering paid advertising and stick to it—especially with fringe media like local school year books, church publications and the like. If you use **one**, you'll probably have to use them **all**. This should simply be considered as a public relations expense; whether or not it is justified depends on the situation in your community. However, you should never find yourself in the position of buying advertising in order to get favorable publicity. The two things should be entirely separate and a news item or editorial should stand on its own merits regardless of how much, if any, advertising the company concerned does.

It should be stressed again that a program like the one outlined above is not a substitute for being a good neighbor nor a cure-all for being a bad one. Every company must accept its responsibility in the community and act like a responsible citizen in every way. Then—and only then—can a good public relations program be effective.

To a company exercising this responsibility fully, a planned program of public relations isn't just desirable, it's almost essential. Only in this way can you get the maximum good from being a good neighbor. As pointed out so effectively by Ralph Anderson (of the Anderson Concrete Corp. in Columbus, Ohio) in a talk at the N.R.M.C.A.'s recent meeting in Los Angeles: "It is true that these efforts will cost you something; they will take some time and effort, but they will return dividends unmeasured by the dollar value or by a yardstick. If we don't clean our own house, our own backyard, and make amends for some of the nuisances caused by our trucks, then someone else will do it for us and we may not like the result, which will be additional regulations and restricted routes."

So step into this vacuum first by being a good neighbor, second by letting your fellow citizens in on the secret. Then you've done all you can to create a desirable climate for your business operations. This you owe to yourself and your community. Both will profit from it.

END

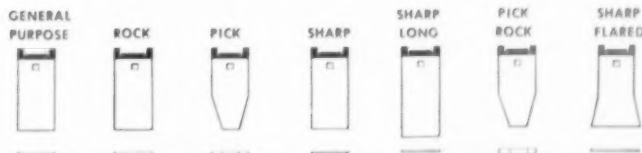


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TESTED •  
POINTS**

**ONLY ESCO CAST 12M  
POINTS GIVE YOU  
ALL THESE  
ADVANTAGES!**

- 1** Abrasion-resistant, shock resistant 12M castings that put the *extra metal* where it counts the most—*at the wear points.*
- 2** Engineered design that starts sharp, wears sharp and lasts longer, yet can be replaced almost instantly to reduce downtime.
- 3** Individual Brinell Testing of every point to assure the right degree of abrasion-resistant hardness at the tip and shock-absorption in the body.
- 4** A choice of seven Point Shapes to fit your equipment to the job regardless of your digging condition.

**There's a longer lasting ESCO Tested Point and Adapter to fit every digging tool.**



**See your ESCO dealer. Ask for Catalog No. 187.**



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FOUNDRY COMPANY**  
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MFG. PLANTS AT PORTLAND, ORE. AND DANVILLE, ILL.  
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**"CROSS HEXSCREEN"**  
*A Honey of a Screen*  
 for **More Strength**  
**More Capacity**  
 and  
**Engineered Performance**

Look for this stamp on  
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The Sign of  
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 for PLUS  
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**CROSS Perforated Steel Sections and Decks for  
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## NEW BIN LEVEL INDICATOR



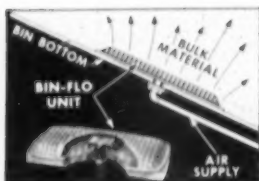
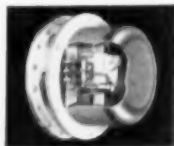
### New ROTO-BIN-DICATOR® Motor driven paddle-type bin level indicator

For automatic bin level indication  
 or control of bulk materials. Par-  
 ticularly suited to applications on  
 bins subject to pressure or vacuum.

**EXPLOSION-PROOF**  
 U. L. listed units available

### BIN- DICATOR®

The original dia-  
 phragm-type bin  
 level indicator. In  
 successful use for 20  
 years.



### BIN-FLO® Assures gravity flow of pulverized materials

Bin-Flo Aerator units in bins,  
 chutes, etc., use small volume,  
 low pressure air to restore flow  
 to dry, pulverized materials  
 which tend to pack and bridge  
 in storage.

Write for detailed literature  
 or call  
 VALley 2-6952

**THE BIN-DICATOR CO.**  
 13946-F Kercheval • Detroit 15, Mich.

**WE SELL DIRECT • PHONE ORDERS COLLECT**

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## Ag-Lime

Continued from page 98

many soil types and with as many kinds of crops as you desire. Have the soil tests run and apply all nutrients, both major and minor, so none are deficient. Place them beside comparison plots where all nutrients plus lime are added. This will tell the story. It need not take much acreage. It can be run on any farm where limestone is needed.

Then there is another phase of the limestone story on which I wish to comment. That is the subject of overliming. I don't know why this has been so highly publicized, but I am reasonably sure in a number of cases this has been the cause of hesitancy and indecision about using limestone. Is it overliming or underfertilizing? Is it the actual story or has there been some wishful thinking about the matter? I have seen instances where limestone was applied at many times the rate recommended and there was a great increase from the extra amount of lime.

It is true some plants do not thrive under neutral soil conditions but they all need some calcium and magnesium as plant food. Where this is the case I do not see where harm will come from a two-ton application of limestone—well distributed and worked into the soil. Again, why not set up some demonstrations and see where the danger line is? I have used small plots and applications of from one to six tons per acre to get this answer. This is one piece of information every man needs for his own farm and for the particular crops he is growing. Here you are confronted with many factors, such as the kind of season, the crop, the planting pattern, amount of rainfall.

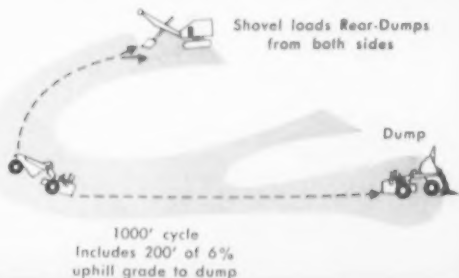
**Errors in evaluating** the effect of limestone or fertilizer will be great unless a check is run. Then, too, there is the possibility that trace elements may be the cause of reduced yields. There are some quarries where the trace element content of the stone may be of surprising extra value in its application. This factor alone might conceivably permit a wider trade area distribution.

There is a place in the limestone story to emphasize the effects over a period of years of adequate liming. It is quite possible the second and third years will show greater results than the first. It is in this fact that the danger lies of not continuing to lime. When good results are seen, more fertilizer is purchased, but the lime is forgotten until it is generally too late. This must be impressed upon the new user as well as the man who bought some lime years ago and then quit.

So far I have been thinking of the physical problems involved, and it is all very well to tell about

Please turn to page 158

# Haul heaped loads over slippery clay footing at Georgia Coating Clay Co. Pit



Within the year, Georgia Coating Clay Co. will produce 90,000 tons of kaolin at Pit #5 — one of their 5 mines in the Macon, Ga., area.

At this pit, 11 miles east of Macon, a 1½-yd. Koehring shovel and two 11-ton D Tournapull Rear-Dumps are stripping a 25' layer of sand and red clay to expose rich kaolin deposits.

## Hauls 7 yds. per load

Shovel operator heaped 7 yds. of overburden into Rear-Dump's wide (5' 10½") bowl in 1 min., 7 sec. Although rains made clay haul roads wet and sticky, each Rear-Dump consistently hauled heavy loads 500' to dump site in average of 1 min., 24 sec. Haul included 200' of 6% uphill grade out of the pit. On the dump, "D" backed in, spotted and dumped in 8 sec. Then, it pulled away and returned over same, slippery haul road to complete 1000' cycle in average of 3 min., 49 sec.

According to Mine Supt. Frank Fountain, when clay road was dry, Tournapull Rear-Dumps cut cycle time to 3 minutes... increased production at the pit by one-third.

## "Outstanding in rock"

Tournapull Rear-Dumps were moved to this tough stripping assignment, at Pit #5, after they profitably stripped 90' overburden at Georgia Coating's other pits. Fountain said, "We were in trouble at this pit until we got these Rear-Dumps, and they brought us out. They did outstanding work in both tough rock and 'water sand'. I like 'em 'cause they're easy to maneuver under a shovel. They can pull themselves out of the soft dumps easy, too."

## "D" scraper... valuable pit tool

Georgia Coating also uses a D Tournapull scraper on exploratory stripping operations. Besides stripping, versatile "D" loads, hauls and spreads sandy topsoil over the slick clay haul roads to speed hauling operations.

## 3 sizes; interchangeable work units

Tournapull Rear Dumps are available in 3 sizes: 11, 22, and 35 tons. All can be interchanged with other trail units for year-round specialized work. Call or write for full specifications.

At a flip of a switch, operator activates electric switch to raise Rear-Dump body into dump position. Streamlined bowl sheds material fast. Note exposed kaolin in background.



Stripping 25' overburden, shovel operator easily heaps good load into Tournapull Rear-Dump. Low rear-entry permits quick swing-out of empty dipper with door open.



D Tournapull scraper self loads, hauls, and spreads topsoil over sticky roads to provide more traction for haulers... handles variety of pit jobs including exploratory mining.

Tournapull—Trademark Reg. U.S. Pat. Off. D&P 1059 Q 6



**LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS**  
A Subsidiary of Westinghouse Air Brake Company

WHERE QUALITY IS A HABIT

## Ag-lime

Continued from page 156

the value of limestone and how profitable its use would be, but what about getting it? Government assistance should be used to the fullest extent, but it is not the complete answer. What have the limestone producers as a group done to sell their product to the one man who can help them and the farmers—the country banker? In the course of my recent study, I spoke to several bankers and not a single one had the story of limestone explained to him.

As a result of a talk I had with one of the directors of the Federal Reserve Bank of Atlanta a couple of years ago regarding agricultural limestone, he presented the subject to the board. After his presentation, the bank published a circular entitled, "Agricultural Lime and Soil Productivity." It was a good piece of work and was sent to all of the member and correspondent banks.

The closing paragraph of the circular should be of particular interest to all. "Finally, bankers can lend funds for the outright purchase of lime, even though the realizable returns will not accrue in one year. Loans for the purchase of lime can prob-

ably be held within the bounds required by prudent banking . . . this should prove a source of satisfaction as well as profit."

In addition to the bankers, it would be well to call on other credit agencies. You cannot overdo the telling of the story of limestone.

In some selling programs the quality and value of the product being sold is emphasized. This has not been the case with agricultural limestone. It has been treated as a stepchild in our agricultural thinking, mainly because it has been referred to as cheap. It has been cheapened because of the thinking. In my book it should be presented as the most valuable material for the money. Is a product that will return three to five to ten dollars for every one spent for it a cheap product? It seems to me it is time for the limestone producers to put on a campaign and sell their product, instead of hoping the government will do it for them.

If the limestone producers—all of them, not just a few—would subscribe to a fund to be used for promotion, I am certain results would be obtained. This will take time and education, but it cannot be ignored. The health of our people and productive capacity of our soil depend upon it. I have confidence there is within the leadership of the agricultural limestone industry the will and wisdom to get the answers.

END

## Two-Tone MANGA-TONE N.M. rebuilds Crusher Rolls

### ***Faster - Less Cost per Pound***

The TWO-TONE process which deposits greater thicknesses of metal and more pounds per hour than any other method of welding can easily prove to be the answer to your roll rebuilding. It is a simple matter for a good welder to consistently lay down welds 1½" wide and 5/16" thick and average 12 pounds of deposited metal per hour.

There is no further need for a welder to work extremely hard and fast, in order to average a puny 5 pounds of weld metal per hour, using the old-fashioned method of the single electrode. Better yet, in addition to the labor factor, the actual deposited metal in a MANGA-TONE weld is generally LESS PER POUND than most of the so-called manganese rebuilding metals.



In the illustration, note the great width of the single pass of the deposited MANGA-TONE. Furthermore, a properly applied deposit of MANGA-TONE on a good manganese casting will resist both abrasion and impact about 40% better than the parent casting metal. For proof, call in our field man.

**THE RESISTO-LOY CO. INC., Grand Rapids 7, Michigan**

3 shovels,  
10 trucks,  
23 stone stockpiles,  
2 waste dumps...



# 1 tractor handles all cleanup



Too big for shovel to handle, these limestone chunks are dozed into worked-out sections of the pit. Four-wheel drive, 208 hp give tractor plenty of power to push up to 2½ cubic yards (5½ tons) per pass.

Tournatractor can switch up to 10 rail cars at once. Low-pressure tires do no damage to rails, ties, or paved surfaces. Supt. J. M. Christopher reports this unit requires "much less lubrication and considerably less maintenance than crawler-tractors formerly used."



For 100 years, the East St. Louis Stone Company and its predecessors have been quarrying limestone from a pit near Belleville, Illinois. For 100 years, they have dug in different directions, until, today, load areas are far apart and on levels varying from near surface to over 225 ft. below surface. Three shovels and ten 11-ton trucks are now used to remove about 750,000 tons of stone yearly.

Suppose you were running this big job. Suppose you had to contend with its widely-scattered loading sites, its network of haul roads, and its steep grades. How many tractors would you ask for to do the "housekeeping" chores? How many to handle shovel cleanup? How many for haul road maintenance? Dump cleanup? Stockpiling? Emergency work?

East St. Louis Stone Company's Superintendent, J. M. Christopher, has what you'll probably agree is the most efficient answer possible. He is using *one tractor to do it all!* His choice is a high-speed rubber-tired Tournatractor.

**Travels 1670 feet  
in 1 minute**

This mobile unit "runs" from job-to-job at speeds to 17 mph. It dozes at speeds up to 8 mph. "We sure like its ability to go fast from one place to another," says Mr. Christopher. Its

regular assignments, scattered 0.1 to 1.5 miles apart, include:

1. Cleans pit floor around all 3 shovels (1½, 2 and 2½ yds. in size). Works at each shovel two or three times per 8 hour shift. Besides ordinary cleanup, dozes over bank any rock chunks too big for shovel to handle. Typical 150 ft. to 200 ft. one-way push takes one minute . . . backup same distance takes half a minute.
2. Cleans shot stone after blasting at each of the 3 locations.
3. Moves large Joy drill around pit.
4. Levels and cleans around crushed stone stockpiles once or twice a day.
5. Levels waste dump once a day. Material mostly clay mixed with limestone. Tournatractor dozes up to 2½ cubic yards per pass.
6. Blades haul roads for the 10 trucks about once a day.
7. In emergencies, switches railroad cars. Can push 3 full cars (total weight, approximately 240 tons) or 10 empties.

Tournatractor can offer you the same high-speed, low-cost production for your work. Write for details. Ask, also, about the new double-duty SwitchTractor, the coupler-equipped go-anywhere tractor for on or off-track service.

Tournatractor—Trademark Reg. U. S. Pat. Off. T-787-Q-9



**LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS**

*A Subsidiary of Westinghouse Air Brake Company*

**WHERE QUALITY IS A HABIT**



Three of the presiding officers at the National Sand and Gravel Association annual convention in Los Angeles, Calif. Left to right: Bryon Weintz, H. G. Feraud and E. K. Davison.

## National Sand and Gravel Association holds meeting

**T**HE NATIONAL SAND AND GRAVEL ASSOCIATION held its annual convention jointly with the National Ready Mixed Concrete Association at the Statler Hotel in Los Angeles, February 11 through 14. It was the 41st meeting for the aggregate producers and was well attended by representatives from all over this country and from Canada, Alaska and Australia.

The sand and gravel industry in the United States is tonnage-wise the world's largest mining business, exceeding even bituminous coal and is rapidly approaching a production figure of a billion tons a year. The meeting was shadowed by a feeling that perhaps expansion was proceeding too swiftly for the market, even with the business boost the new highway program could give.

Southern California producers played the part of gracious hosts and extend-

ed warm hospitality to the representatives and their wives.

The program of the convention was heavy on technical, legal and public relations subjects of interest to management and contained comparatively little directed toward the production man at the superintendent level. Many of the events on the schedule were held as joint meetings because they were equally important to the sand and gravel and ready-mix producers.

A Monday afternoon session was devoted to a conference on operation of state and regional associations, under the chairmanship of H. G. Feraud, executive secretary of the Southern California Associations. Another session was devoted to special subjects of interest to companies using navigable waters.

One of the outstanding talks of the meeting was given on Tuesday by Ez-

ra C. Knowlton, who outlined the place of the sand and gravel producer in the forthcoming highway program. Other speakers were John T. Sapienza, Charles E. Brady and Charles A. Horsky. Internal revenue regulations, standard clauses for sales agreements, and proposed railroad rate increases were covered at the same session, under the chairmanship of Roy E. Weaver, president of the National Sand and Gravel Association. During the meeting officers were re-elected. These were Mr. Weaver, president; E. Phil Gemmer, vice-president; and E. K. Davison, secretary-treasurer.

At the conclusion of the session, the ROCK PRODUCTS safety trophies were awarded. The Class A award for more than 500,000 tons was won by the Van Sciver plant of the Warner Co., Morrisville, Pa. The Class B award—200,000 to 500,000 tons—was won by the

(Continued on page 162)

Adams' extra-fast back-up speeds (to 13 mph) save time on one-way work in restricted areas. This "550" can make 5 shuttle "passes" in the time most other graders take to make 4.

# Why 15 speeds in a motor grader?



**B**ecause with this wide range of effective speeds you can do more pit and haul-road grading with each machine . . . boost production while cutting costs, 15 combinations of power and speed enable you to make deeper cuts, push bigger loads, work and travel faster than ordinary graders.

That is why modern Adams 80 to 150 hp machines give you 8 standard speeds forward and 4 reverse, plus 3 creeper speeds (optional), for a total of 15 speeds . . . all operating through full constant-mesh transmission. Range of the 123 hp Adams 550, shown in chart below, is typical.

## Wider range of forward speeds match power to load

For smoothing and building haul-roads, ditching, clean-up at pit, plant, and stockpile, Adams provides 4 efficient working speeds. Other graders, with 6 forward speeds, have only 3 working speeds. Here's an example of what this means in operation: Adams moves a given load in 3rd gear at 4.6 mph, using full horsepower. With a 6-speed grader and the same load, your operator would have to drop back to 2nd gear, 3½-4 mph . . . or go to 3rd gear where he would have to cut-back the throttle, thereby losing power. It's

like that on every operation . . . Adams' 15 speeds get more work done *faster* every day, the year 'round.

Adams' two intermediate speeds, 10 and 14 mph, come in handy for light, fast blading, maneuvering, and climbing tough grades. Travel speeds to 25 mph move rig quickly from job-to-job. Adams foot accelerator and dual-action hydraulic brakes make travel on winding roads, slopes, benches, near other machines, safe, easy, and comfortable as driving a modern truck.

## Reverse speeds to 13 mph save time on shuttle grading

Most graders have only 2 reverse gears, with speeds to about 3 and 7 mph. Adams has 4 reverse gears . . . 2 for working, 2 for high-speed back-up. Again, this wider range of speeds gets more work done, uses engine power to full advantage.

But it's Adams' 3rd and 4th reverse speeds that pay the big dividends! Many times your operator works a 200' to 400' stretch or even more. It's too short, or the area too confined, to make turn-around practical . . . so he backs-up. Adams' higher reverse speeds of 8 and 13 mph get the grader back to its starting point fast, convert wasted travel time to extra blade-work. These

gears also cut maneuvering time, speed back-up to buck snow drifts.

## Creeper gears extend grader's working range

Three optional creeper speeds are available, as original equipment, or as an extra which can be added in the field. These gears are in the low-low range of operating speeds, 0.25 to 1.76 mph. They afford a means to concentrate full engine power for ripping up old roadways, pulling stumps, and working through rocks and roots. Creepers eliminate the necessity for "slipping the clutch" at high RPM to get steady power at slow speed . . . reduce shock and clutch wear. Creepers also make it possible to cut more accurate grades, and work in tight places.

## 190 hp POWER-Flow "660"

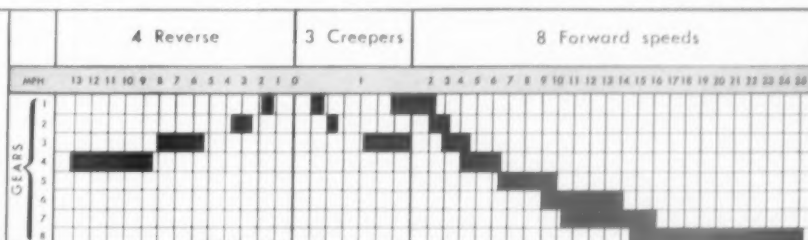
For extra push power at *all* speeds, Adams POWER Flow 660 with torque converter gives you 27% more engine power, plus the effective work-power of an infinite number of gear ratios, 0.0 to 27.4 mph.

For grader operation at most efficient speeds, specify 15-speed standard transmission or torque-converter drive. Contact us for details on Adams 190, 150, 123, 104, 80, 60 hp graders.

Adams, POWER Flow—Trademark AG-48 M.B.

## Work speed range Adams "550"

Speed range is shown between RPM at which maximum torque is obtained, and RPM at which maximum engine horsepower is developed.



**LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS**

*A Subsidiary of Westinghouse Air Brake Company*

**WHERE QUALITY IS A HABIT**

## N.S.G.A. MEETING

(Continued from page 160)

Cullum plant of the Lyman-Richey Sand and Gravel Corp. The Class C award—less than 200,000 tons—went to the Fort Jefferson plant of the American Aggregates Corp.

Wednesday morning's meeting, directed by Byron P. Weintz, heard B. A. Vallerger discuss the effects of aggregate characteristics on the stability of asphaltic mixes. I. L. Jennings told of the production of specification sand by blending previously prepared sizes. Francis N. Hveem gave the audience a description of how the Sand Equivalent Test is carried out. S. A. Howard, Pacific Cement and Aggregates, Inc., outlined his experience with the test. The half day session ended with a panel discussion on removal of soft and unsound particles from sand and gravel with F. L. Lloyd, Jr. presiding.

A simultaneous joint session presided over by E. P. Gemmer heard Ralph H. Anderson and E. K. Davison speak on public relations programs and participated in a panel discussion on the question. At the joint luncheon that followed, Robert Mitchell presided and the Hon. Barry M. Goldwater, Senator from Arizona, spoke.

On Thursday morning, Noel J. Redmond presided over joint sessions covering proposed changes in the federal tax laws, discussed by John T. Sapienza and the current developments in the legality of meeting competitors' lower delivered prices, as explained by Charles A. Horsky.

Chairman of the afternoon program was Harold E. Bender. Members heard J. Richard Glade speak on what organizations can do to reduce unemployment insurance benefit costs, Richard W. Lund on effective organization by employers for group bargaining with labor unions, and Vincent P. Ahearn, executive secretary of the sand and gravel group on the political climate for business in 1957.

More pictures will be found on page 164

**Harold A. Koop** with the ROCK PRODUCTS safety award won by Lyman-Richey Sand and Gravel Corp., Cullum plant, Cullum, Neb.



**Irving Warner, Jr.**, president of Warner Co. with the ROCK PRODUCTS safety trophy presented to his company. Roy E. Weaver, president of the National Sand and Gravel Association is congratulating Mr. Warner



**John T. Sapienza**, Counsel for the Association



**Ezra C. Knowlton**, Utah Sand and Gravel Products Corp., was one of the speakers at the convention

**C. E. Glander** with the ROCK PRODUCTS safety award won by American Aggregates Corporation, Fort Jefferson Plant, Fort Jefferson, Ohio



*New Automatic Precipitator Control by*

# WESTERN PRECIPITATION

*offers many vital advantages...*

## 1 LONG LIFE

This new control has indefinite life expectancy under all types of operating conditions. There are no tubes to replace, no high speed relays, counters, or timers to maintain. All circuitry consists of rugged "static" devices that have unusually long life!

## 3 STABILITY

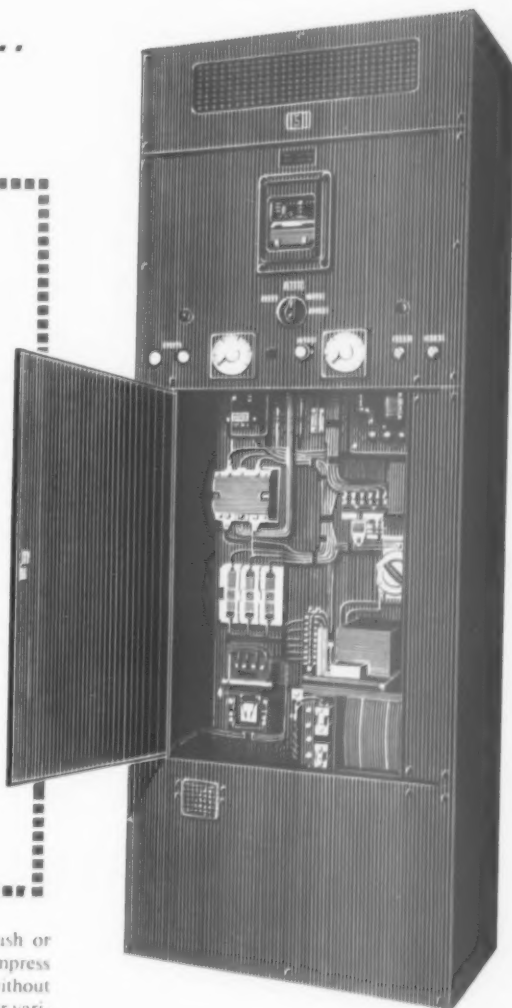
Under short circuit, open circuit or other varying conditions, this control is completely stable and inherently trouble-free!

## 2 RELIABILITY

Optimum Precipitator power input is maintained regardless of operating conditions. The sensing control is simple, positive, accurate—and automatically evaluates the spark "Power Value" (intensity and frequency)—not just frequency or intensity alone.

## 4 MODEST COST

Modest initial cost coupled with negligible maintenance assure optimum operating efficiency (therefore lower operating costs) throughout many years of continuous service.



**WHEN** using a Cottrell Precipitator for collecting dust, fume, fly ash or other suspensions from industrial gases, it is essential at all times to impress on the high voltage system the highest possible voltage and current without "flashover". Depending upon gas conditions, dust loading and other variable factors, the optimum voltage and current requirements vary widely from one minute to the next. Therefore, the vital importance of a simple, trouble-free and highly sensitive Precipitator Control is self-evident.

This new Western Precipitation Automatic Precipitator Control—a product of the organization that has consistently led in the application of Cottrell Precipitators for industrial gas cleaning—combines vital advantages found in no other competitive equipment. Our nearest representative will be glad to supply complete details. Or write direct!

Why not modernize your present out-dated Precipitator installation? The Western Precipitation Automatic Precipitator Control can be installed on any Cottrell unit. For further information contact our nearest office!

## Western Precipitation Corporation

Designers and Manufacturers of Equipment for Collection of Suspended Material from Gases and Equipment for the Process Industries

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COTTRELL Electrical Precipitators  
MULTICLONE Mechanical Collectors  
CMP Combination Units  
DUALAIRE Reverse-Jet Filters  
HOLD FLITE Processors

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**Front row, left to right:** Jay Lilywhite, Harry Iredale, Art Battle and Walt Sherburne, Consolidated Rock Products Company. **Back row:** Bill Lucas, Harry Utley

## N.S.G.A. MEETING

*(Continued from page 162)*



**Byron P. Weintz**, Chief Engineer, Consolidated Rock Products Company, and **C. G. Cooley**, Cooley Gravel Co., Denver, Colo.



**Mr. and Mrs. Bruce Woolpert**, Central Supply Co., and **A. C. Caldwell**, Wyoming Sand and Stone Co.



**Alex B. Perry** and **B. F. Smith, Jr.**, Perry Minerals Co., Inc., Clearwater, S.C.



**Mrs. J. A. Bullen, Jr.**

**Mr. and Mrs. Harold E. Bender**





## Big Michigan Tractor Shovel loads out 4,400,000 lbs. of open hearth slag per day

Clearing ground for the Lake Calumet Harbor near Chicago, Contractor C. J. Wilson is removing 700,000 yds. of open hearth slag dumped by neighboring steel mills. This material weighs approximately 4000 lbs. per yd., is extremely abrasive and tough to dig. With one 2½-yd. Michigan Tractor Shovel, Wilson is loading out 110 trucks per day—10 yd. six-wheelers. That's 4,400,000 lbs. of slag per day!

### Does work of 1½-yd. shovel

Wilson says that he couldn't beat this production with a 1½-yd. shovel. Calculating the hourly cost (initial cost, depreciation, maintenance, etc.), of a dragline versus the Michigan, the Michigan does the job at least 40% cheaper. With the abrasive ground

conditions which prevail on the job, Wilson is naturally enthusiastic about being able to do the job on rubber-tires.

### "Can't beat the front-end"

Since the first Michigan Tractor Shovel was introduced early in 1954, more and more contractors have found that this machine will handle jobs which they'd never even attempted with rubber tired equipment. Veteran crawler-loader owners, like C. J. Wilson agree that you can't beat the front-end on this machine. It will out-dig any make or type of Tractor Shovel, bar none.

### Balanced power and weight

The best way to understand the Michigan's operational advantages is to watch one *ease up to a pile of tough material and come out with a heaping bucket load*. You don't have to ram the pile to get penetration. The Michigan's combination of bucket action, weight and power enables the machine to *dig its way* into the pile. 133 diesel horsepower flows smoothly through the 3-

to-1 torque converter, 4-speed power-shift transmission and heavy duty drive axles right out to four big tires. Planetary gears in the wheel hub eliminate axle breakage... they take 70% of the torque load off the shafts.

### Standard on all models

Clark torque converter, power-shift transmission and planetary wheel drive axles are standard equipment on every model in the Michigan Tractor Shovel line—1-yd., 1½-yd. and 2½-yd. capacity. In each capacity, a Michigan Tractor Shovel will give you more useable digging power and traction than you've ever seen on this type of machine—faster production, lower cost per yard. For proof, ask your Michigan distributor to demonstrate—you name the job.

Michigan is a registered trademark of

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### CLARK EQUIPMENT COMPANY

Construction Machinery Division

2481 Pipestone Road  
Benton Harbor 14, Michigan



Clean design of the Michigan bucket mechanism provides good dumping clearance. Note the heaping bucket load. 40 degree low-level tip-back guarantees heaping loads of any material which can be heaped.



**The panel on conservation** (from left to right): C. M. Ferguson, Administrator, Federal Extension Service; D. A. Williams, Administrator, Soil Conservation Service; Assistant Secretary of Agriculture Ervin L. Peterson; President and General Manager-Elect Robert M. Koch; Paul M. Koger, Administrator, ACP Service; H. J. Daggett, Director Soil Bank Division; H. L. Manwaring, Deputy Administrator for Production, USDA

## N.A.L.I. discusses operating problems, conservation at annual convention

**M**EMBERS AND GUESTS of the National Agricultural Limestone Institute took advantage of a real opportunity January 19-23 to catch up on industry problems at the Institute's 12th annual convention in Washington, D.C. This was one of the best attended and most interesting meetings ever held by the group. In addition to the regular business sessions, a convention program was built around three major topics: operating problems, the government's conservation program and promotion.

President Leonard S. Fry of Fry Coal and Stone Co., Mercersburg, Penn., opened the first convention session Tuesday morning after the presentation of a color movie on "Green Dollars." The film, prepared by Illinois Extension Service, accented the importance in the use of lime and other elements in building a sound legume-grass program.

In his welcoming address Mr. Fry stated that the Institute now had 435 members. He discussed progress with relation to the federal soil conservation program, stating that the admin-

istration at the Washington level has approved many important programs. These include prohibition against free liming, a break-through in the 50-percent payment barrier and recognizing the benefits of a policy to get all testing on an advisory instead of a mandatory basis.

J. D. Mount of Shouns, Tenn., treasurer of N.A.L.I., reported the financial condition of the Institute to be satisfactory. Joseph J. Griesemer reported for the by-laws committee that a change had been made in the official titles of the officers of the Institute. Officers now consist of a chairman of the board, vice-chairman of the board, secretary, and president and general manager. By board of directors' action on the previous Saturday, Russell W. Hunt of Southwest Lime Co. was unanimously elected chairman of the board. William E. Stone, Piqua Quarries, Piqua, Ohio, was elected vice-chairman of the board, and Julius E. Ott of the Wallace Stone Co., Bayport, Mich., was re-elected secretary by acclamation.

Mr. Griesemer also announced that Robert Koch, former executive secre-

tary of the Institute, had been named the president and general manager.

Dana Farber of Franklin, N.J., reported for the legislation and public relations committee, and an informative report on the percentage depletion committee was made by Charles Rich. Information on activities of both committees has been made available to N.A.L.I. membership.

A report on the various regions of N.A.L.I. was combined into one report that was given by Robert M. Bridges of Chicago, Ill. The regional groups met together Sunday morning and made recommendations based on data received from a questionnaire that was distributed through all regions. The recommendations are: (1) that mandatory soil test in advance of application be eliminated; (2) that purchase orders should be adopted in states where they do not have contracts; (3) that efforts be continued to raise rates of payment; (4) and that state and county committees be asked to raise payments if they are agreed to by area groups.

(Continued on page 168)



Stemming material delivered by 2 1/4 yd. Michigan 175A

*Commutes 2 miles between Arizona pits...*

## **Versatile Michigan pays for itself on a multitude of open pit jobs**

This 2 1/4-yd. Michigan Tractor Shovel works at one of the biggest open pit copper mines in Arizona. At this location two pits are being mined: one a 4000 x 6000 pit up to 600-ft. deep; the other a new cut two miles away. Between these pits, the 27-mph Michigan commutes on its own power to handle a multitude of jobs.

### **Cleans up excess ore**

Prior to blasting, the Michigan cleans up excess ore around the toes of the benches. It takes less than two minutes to put a heaping load into a 6-yd. dump truck. This efficient clean-up job makes for fuller breakout of material when blasting.

### **Delivers stemming material**

No matter how hard the drillers try to dispose of the mud from the churn-type blast hole drills, trucks are often

unable to get through to deliver stemming material. The 4-wheel drive Michigan easily works through the mud, delivers loads of stemming material to the powder loading points to keep shots on schedule.

### **Cleans up around shovels**

When the crawler bulldozers come off the mine floor for repairs, the 133-hp Michigan does the clean-up work around the power shovels. Working on a new addition to the concentrating plant, the Michigan handles sand, aggregate and cement at the concrete plant. The Michigan also built a baseball diamond and part of an air strip by hauling and spreading the necessary material. Its big rubber tires even did the compacting!

### **A versatile work horse**

With Clark torque converter, power-

shift transmission and planetary wheel axles, the Michigan Tractor Shovel delivers *more useable power and traction than you've ever seen on this type of machine.* It will handle amazingly heavy jobs—in addition to the routine assignments which affect the performance of the more expensive equipment, like power shovels, drills and rolling stock. For proof that the Michigan is in a class by itself, ask for an on-the-job demonstration. *You name the job.*

### **CLARK EQUIPMENT COMPANY**

Construction Machinery Division

2481 Pipestone Road

Benton Harbor 23, Michigan

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EQUIPMENT**



**Officers and executive committee** for the coming year (left to right): Regional Vice-President R. B. McNab, American Limestone Company; President and General Manager Robert M. Koch, Washington, D.C.; Past President Leonard S. Fry, Fry Coal and Stone Company; Director C. A. Munz, Eastern Rock Products, Inc.; Regional Vice-President E. B. Sneed, Texas Crushed Stone Co., Inc.; Chairman of the Board Russell W. Hunt, Southwest Lime Company; Vice Chairman of the Board William E. Stone, Armco Steel Corporation; Treasurer J. B. Mount, Maymead Lime Company; Director Lynn N. Stewart; Director Buford V. Everett, Everett Quarries, Inc.



**Left to right:** President Leonard S. Fry, Fry Coal and Stone Company; Senator Karl E. Mundt of South Dakota; Chairman-Elect of the Board Russell W. Hunt; President and General Manager-Elect Robert M. Koch

## N.A.L.I. CONVENTION

(Continued from page 166)

The mandatory soil-test picture is changing, according to Mr. Koch, the Institute's new president and general manager. At one time only two states did not have a mandatory test specification. Now, 24 states have adopted some practical substitute. Enrollment of the farmer in the program has increased in those states that modified the test. Contrarywise, there was a 40-percent decrease in the use of lime in some of the states that did not change.

Mr. Koch indicated that it was the policy of the A.C.P. to release decision on the use of test to the states, and then down to the county committees. Thus, it will be necessary to work at the county level to make further gains in using a test as a guide and not making it mandatory.

Discussion of the combined Regional report developed basic questions to

bring before the U.S.D.A.'s conservation program panel on Wednesday.

**Presiding officer at the greeting luncheon** on Tuesday was Robert M. Patton, president, New York Coal Co., Columbus, Ohio. In speaking on "The Future of Our Industry," Mr. Koch reviewed the past 12 months of the Institute's activities and then discussed the future possibilities for growth of the industry. He recounted the history of the Agricultural Conservation Program, which began in 1936, and showed how the use of agricultural limestone had grown under the federal program. He also spoke of the relatively new Soil Bank Program, for which Congress has allocated \$1,200,000,000. The Soil Bank Program has two parts: (1) acreage reserve program; (2) conservation reserve program. The C.R.P. portion of the program, for which \$750,000,000 has been allocated, apparently is not working. An article elsewhere in this issue, by Mr.

Koch, explains the Soil Bank program in detail.

A panel on operations at the second session of the convention, Tuesday afternoon, consisted of an active discussion of five operating phases. The first paper, given by Charles Rich, president, Swanton Lime Works, Inc., Swanton, Vt., discussed the application of a Gardner-Denver 2½-in. quarry drill with air track (self-propelled) mounting and using sectional steel. The new drill has replaced a 2-in. drill on the property. It is anticipated that the new drill will allow a reduction in the powder factor and the cost of drilling per ton.

**A dust control method** for a small plant was described by Wm. J. Clark, Munnsville Limestone Corp. The installation, which does an effective job, is low in cost and uses Compound M wetting agent in sprays at strategic points around the plant where flow of material is concentrated. Operating cost at the 60-tph. plant is less than one cent per ton. State inspectors have passed on its use.

John M. Deely, Lee Lime Corp., presented a resume of the new blasting code and noted that cooperation of interested associations and the Bureau of Fire Underwriters had resulted in the preparation of a "Guide for Adjusters." The new guide book, which is available for distribution, is an important step toward elimination of false-claim payments.

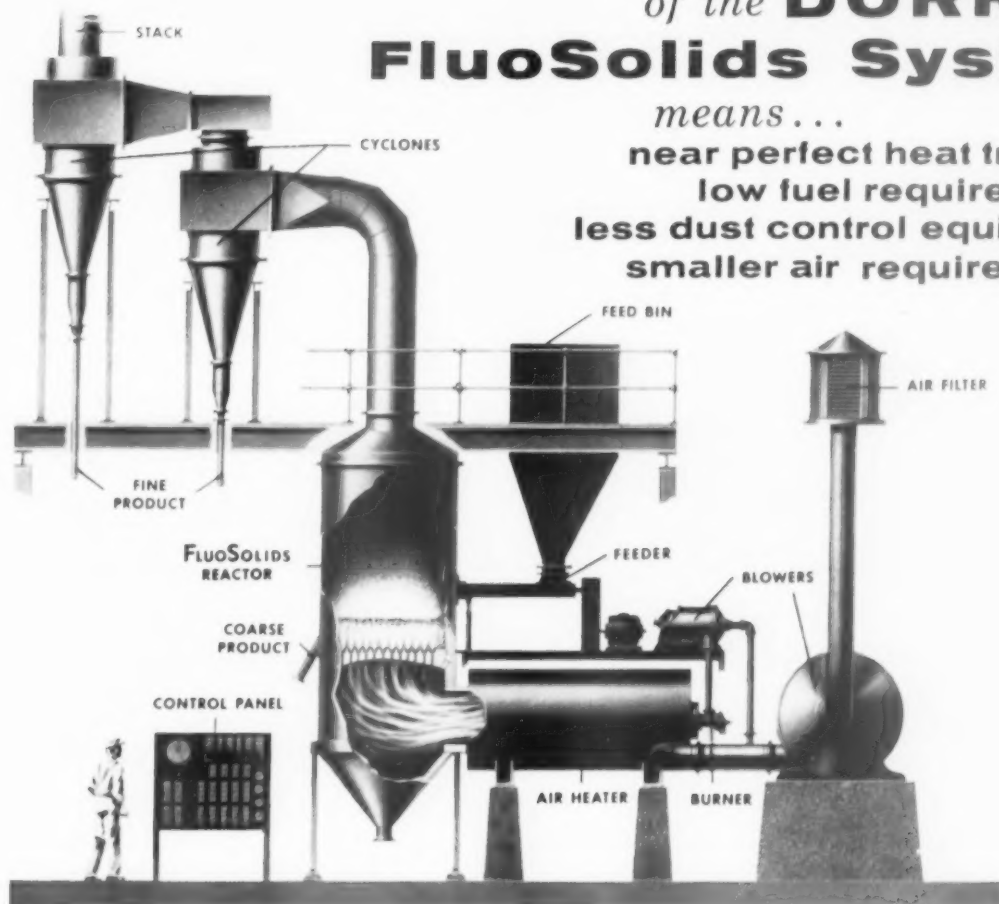
Preventive maintenance was covered by asking the group for useful ideas that have cut plant down-time. Arthur R. Alvis, Alvis Limestone & Concrete Co., acted as moderator. Reports given indicate that preventive

(Continued on page 170)

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**low fuel requirements**  
**less dust control equipment**  
**smaller air requirements**



The drying of high moisture feed such as granulated blast furnace slag for producing slag cement requires high capacities and essentially zero moisture content discharge. And the fluidized techniques involved in the Dorrco FluoSolids System result in higher drying efficiency and capacity per unit area than any other known drying method.

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Complete and simple instrumentation means lower

operating costs. And maintenance costs, due to the absence of moving parts within the Reactor itself, are extremely low.

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FluoSolids T. M. Reg. U. S. Pat. Off.



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Left to right: Director T. C. Adams, Cedar Bluff Stone Company, Inc.; Congressman William H. Natcher; Director and Mrs. Powell G. Potts, Southern Stone Company, Inc.



Left to right: Mr. and Mrs. C. L. Richardson, Gordon Brothers Quarries; Mrs. Buford B. Everett; Congressman W. R. Hull, Jr.; Jerry Litton, National Secretary of Future Farmers of America; Director Buford V. Everett, Everett Quarries, Inc.; Mr. and Mrs. A. E. Richardson, Gordon Brothers Quarries

## N.A.L.I. CONVENTION

(Continued from page 168)

maintenance plans in operation have saved from 20 to 40 percent in maintenance costs. They have been applied to operation of automotive equipment, bulldozers, trucks, shovels and other similar equipment. Some plans are operated in conjunction with a safety bonus program, to provide incentive for both preventive maintenance and safety.

Conversion of underground limestone quarries into useful underground storage for strategic materials was discussed by Russell W. Hunt, Southwest Lime Co. Mr. Hunt has been requested to promote underground storage by the Director of Industry Defense. In addition to being a profitable business, he indicated that it is most important to defense of this country. Mr. Hunt is interested in talking with any limestone operator who has a plant where some underground mining can be done.

The session on conservation, which was so successful at last year's meet-

ing, proved to be one of the highlights of the 1957 meeting. E. L. Peterson, Assistant Secretary of Agriculture, was on hand with five of his department or bureau heads to explain the conservation programs as viewed from the administration level.

The mandatory soil test got primary attention. Industry members complained that the advance mandatory soil test was impractical because it resulted in delay at the local level in getting liming materials on the farms. Thus, farmer participation was reduced. Panel members stated that, on the national level, it was agreed the soil test be made. But, states can allow minimum and maximum allotments without an advance test. The problem is "at the state level," it was said.

From an industry standpoint, the second most important problem was that of payment rates. Producers believe that a drop to the 50-percent rate of payment had more to do with the fall in farmer participation in A.C.P. than any other factor. It is realized that payment can be increased to 80 percent, but it is difficult to get rates in excess of 50 percent over to the County Committee. Panel members explained three methods of setting the

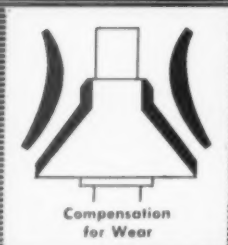
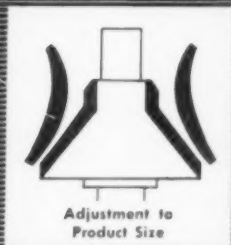
rate of cost-sharing. Each method depends upon whether benefits are immediate or intermediate or long range.

The importance of promotional work was highlighted by a five-man panel. R. B. McNab, American Limestone Company, and Lynn N. Stewart, Columbus, Indiana were co-chairmen of the session. The great need for promotion in every form was recognized. Much has been done already by many companies. But the favored approach is an analysis of individual needs in the local area and concentration on a personal-contact educational program to satisfy those needs. In most cases, good educational and promotional programs have resulted in greater limestone sales. The limestone user must know the benefits of using liming materials, and also should fully understand the A.C.P. program and how it can help him.

B. T. Abbott, Southern States Soil Service, Memphis, Tennessee, offered many good suggestions to agricultural limestone producers in increasing the farmer's use of liming materials. He suggested that it is a mistake to present agricultural limestone as the cheapest material a farmer can use. Instead, its use should be based on the fact that it gives the most effective return per dollar invested. Also, he said, the government programs will not provide enough funds to do the job that has to be done. He urged members to contact bankers and sell them on the outright effectiveness of a good liming program. A forthright article on the subject by Mr. Abbott appears elsewhere in this issue.

The Manufacturers' Division of N.A.L.I. was host at a buffet dinner and dance Tuesday evening to everyone attending the convention. Nearly 250 attended, which represented almost 90 percent of registration. A meeting of this Division was held on Wednesday afternoon. New officers elected include Ralph C. Johnson, Chairman; George S. Harvey, 1st Vice Chairman, Sr.; P. K. Alvord, 2nd Vice Chairman, Sr.; Harry A. Wendler, 1st Vice Chairman, Jr.; W. H. Van Buren, 2nd Vice Chairman, Jr.; and D. H. Weber, Secretary.

END



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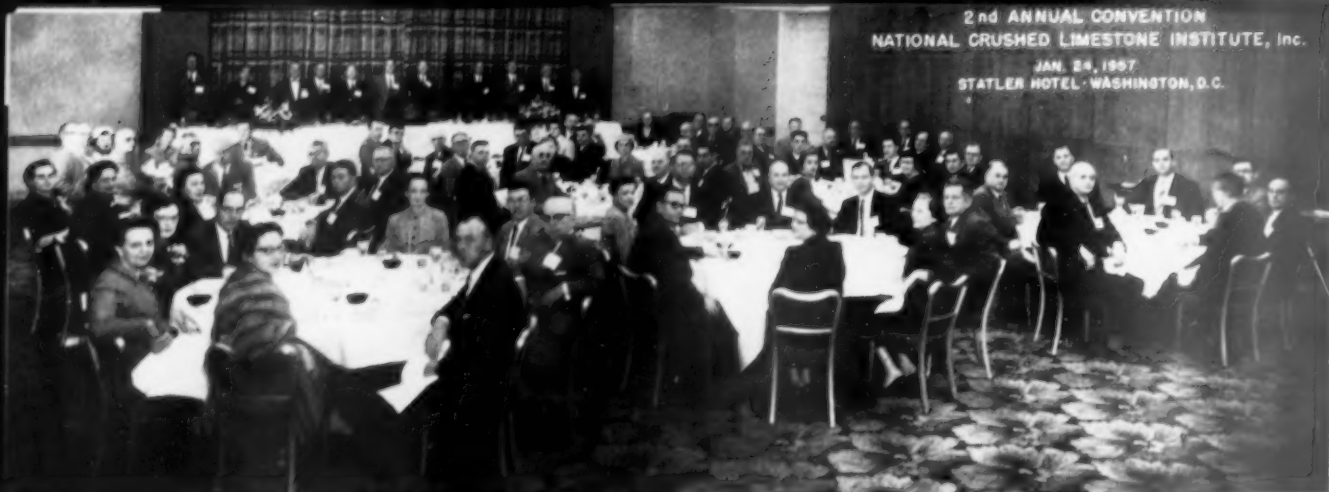
Gyratory Crusher



Grinding Mill



Kiln, Cooler, Dryer



Annual luncheon was presided over by Robert M. Patton



President-elect J. B. Mount

## N.C.L.I. meeting discusses federal highway bill

**T**HE SECOND ANNUAL MEETING OF National Crushed Limestone Institute, Inc. focused on the present status and future problems of the huge federal highway programs. The group met in Washington, D.C. on January 24, 1957.

Highlights of the meeting were discussions on various phases of the highway construction program by government administration people and others who deal directly with it. Senator Albert Gore of Tennessee had the spotlight at the annual luncheon of the group. He had just completed hearings on Congressional Hill on the present status of the program, and was able to bring the group an up-to-date evaluation of the current situation.

The aims and objectives of the American Road Builders' Association were discussed in an address by ARBA president, J. N. Robertson. He pointed out that no single segment of the highway industry can expedite the big program now on the books, but that all segments must work closely together to bring about the desired results. ARBA, he indicated, is the national association that represents all industry segments.

After naming and describing the functions of the eight separate divisions of ARBA, Mr. Robertson announced a proposed project in the form of a 28-min. 16-mm color-sound motion picture. Purpose of the film is

to interest college engineering students in highway engineering as a profession. To be shown also are the characteristics of the Interstate System, and how the highway dollar is to be spent.

**Of specific interest to the group** were comments on aggregate needs for the new highways. "For every billion dollars of construction, we need more than 76 million tons of aggregate," he said. Requirements in 1956 were 540 million tons. That figure will be raised to about 800 million tons when a spending rate of \$8½ billion per year is reached.

Scope of the highway program was outlined by Capt. C. D. Curtis, Commissioner, Bureau of Public Roads. After bringing its history up to date, Capt. Curtis posed some important questions to producers. He believed that they required immediate answers, as demand for aggregates is not a possibility of the future—it is now at hand. He would like to know: How well are you prepared to meet the demand? Does your plant need modernization? Is it efficiently organized and operated? Will it pay you to increase capacity? Are there weak spots in your processing?

Senator Gore, in his address at the luncheon, spoke briefly on the problem of getting the federal highway bill into law. "Now," he said, "there is

another job." It is that of conversion of the plan into actual construction of highways. He recognized a tardiness in the program this past fall, and called hearings to check on progress. Those hearings pointed out to him two things of primary concern: a lack of uniform progress, and a threat of serious steel shortage. His Committee is acting as a watchdog on progress, and is attempting to improve progress to the proper rate required by the specifications of the Act. Much already has been done.

Senator Gore stated that he felt the aggregate industry had made plans for increased production to meet the need, so he is not concerned much about that phase. He is concerned about the supply of steel, somewhat disturbed about cement, and those industries have been asked to testify. Steel, particularly, is of concern at the moment. According to projections, the future indicates "sharply increasing prices in the immediate future and a gap between supply and demand of some 15 million tons by 1960."

Officers re-elected include: C. A. Broecker, Indianapolis, Ind., 1st vice-president; Robert M. Koch, Washington, D. C., executive vice-president; Taisto Laine, superintendent of limestone plant, Hanna Coal Co., treasurer; and Thomas B. Stafford, Vermont Marble Co., secretary.

END



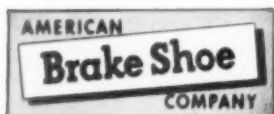
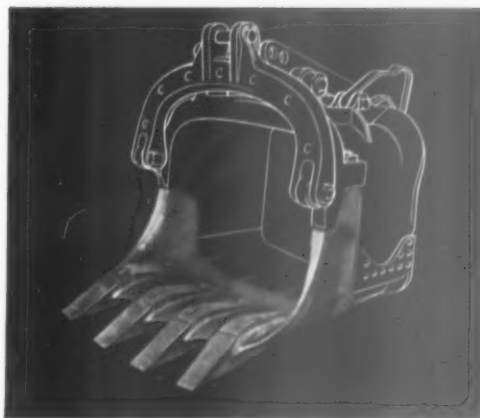
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The lip juts way out where it easily bites up—and delivers—the full yardage of coal. It's a sharp *extension* of the dipper, with fanned teeth—for fast, easy penetration. The dipper digs out a heavier load without strain on the shovel... even requires less power, and prolongs life of all parts.

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If getting more pay loads moved faster with less wear on equipment means more profits to you, specify *Amsco Renewable Lip Dippers*.



**AMERICAN MANGANESE STEEL DIVISION**  
Chicago Heights, Ill.

# Review of Recent U.S. Patents on Non-Metallic Minerals

By OLIVER S. NORTH\*

2,776,129 — An apparatus and method for producing porous, **light-weight aggregate** suitable for use in concrete or for other building applications, sand-lime brick, **portland cement**, etc. Various raw siliceous and aluminous materials are mixed with a low-grade fuel and sintered on a movable grate in a tunnel kiln. (to F. Lippe. Part interest to R. Koster.)

2,776,132 — Advantages of economy and product quality are claimed for this fluidized-bed apparatus and method for producing **portland cement**. (to R. Pyzel.)

2,776,191 — A process for producing magnesium oxide from ores containing magnesium sulfate, for example **langbeinite** and **polyhalite**. (to G. H. Gloss. Assigned to International Minerals & Chemical Corp.)

2,776,203 — An alumina cement, such as Atlas' Lumnite, can be added to an exothermic mixture used in alloying chromium and steel, to supply the required calcium aluminate accelerator component. (to D. C. Hilty. Assigned to Union Carbide & Carbon.)

2,776,210 — A process for producing relatively lightweight, porous building units from spent shale or oil-shale waste. The material is crushed and mixed with a small proportion of **portland cement** and sodium silicate. The unit is shaped and then fired under such conditions that the carbon content in the shale is distilled from the block without deformation thereof. (to H. E. Bowers. Assigned, Commonwealth Engineering Co. of Ohio.)

2,776,234 — In a process for producing water-repellent, vapor-permeable **gypsum** sheathing board, the paper liners are waterproofed by treatment with a Werner-type acid chromic chloride, for example stearate chromic chloride. (to W. C. Riddell and G. B. Kirk. Assigned to Kaiser Gypsum Co., Inc.)

2,776,566 — An apparatus for metering the flow of fluidized solids, that is, material being transported in the aerated state, such as **sand**, **hydraulic cement**, etc. (to B. L. Schulman and

W. G. May. Assigned to Esso Research & Engineering Co.)

2,776,828 — An improved method for processing the shale-like **phosphate rock** found in Idaho and other western states to prepare it for treatment in electric phosphate smelting furnaces. Mine-run ore is crushed and separated into two fractions. The larger particles can be calcined directly, but the fines are pelletized and dried before being calcined. (to M. C. Marcellus, T. Woodward, and J. Work. Assigned to Food Machinery & Chemical Corp.)

2,776,901-2,776,902-2,776,903 — Processes for removing entrained and entrapped air from **concrete** slurries, even those made using air-entrained **portland cement**, and thus improving the structural strength of the hardened product. This can be accomplished by adding a very small percentage of any of the following: dibutyl phthalate; a water-insoluble liquid aliphatic alcohol; or a water-insoluble liquid aliphatic or aromatic ester of a weak inorganic acid. (to E. W. Scripture, Jr. Assigned to American-Marietta Co.)

2,776,906 — An improved compound for caulking stone and masonry work comprises **silica sand**, silica flour, white lead, litharge, and **whiting**. When the compound is to be gun-applied, **asbestos** shorts can be added to it as a plasticiser. (to D. Hill and H. M. Whitney.)

2,776,914 — In a method of producing a water-impervious, chemically-resistant **concrete**, the aggregate is pre-coated with certain resinous materials and chemicals. Producers of **sand**, **gravel** and **crushed stone** can coat their material for direct sale to the trade. The resins and chemicals are stirred with the aggregate, which then is heated before being dried in an air stream. (to R. C. Faulwetter.)

2,777,795 — A method for dispersing an insecticide on the usual fine-powder carrier, such as **fuller's earth** or **bentonite** and subsequently coating a heavier, larger-particled material, for example, ordinary **sand**, with the carrier-insecticide material. In use, this product will be effective longer than the normal lightweight composition, because the latter is more quickly washed away by dew or rain. (to J. F. Les Veaux and E. F. Orwoll. Assigned

to Food Machinery & Chemical Corp.)

2,778,088 — Improved method and apparatus for the continuous, large-scale manufacture of lightweight, reinforced, **insulating concrete** roof slabs. Among the lightweight aggregates that may be used are exfoliated **vermiculite**, expanded **perlite**, **pumice** and **haydite**. (to R. W. Sterrett. Assigned to Southern Zonolite Co.)

2,778,160 — In an improved method for producing foamed **blast-furnace slag**, molten slag is poured onto a level surface and water forced upwardly so as to bring about maximum foaming. Additional water is then injected to stabilize the foamed material at peak volume. (Assigned to M. Gallai-Hatchard.)

2,778,712 — In an improved process for manufacturing citrate-soluble tricalcium phosphate from **phosphate rock**, an optimum amount of potassium chloride is added to the calcium nitrate-containing digestion mass to render predominantly citrate-soluble the tricalcium phosphate precipitated therefrom. (to P. Caldwell. Assigned Cannac Research & Development Co.)

2,778,722 — A process for conditioning **phosphate rock** with hydrochloric acid to break the fluorapatite lattice so that the rock can be defluorinated readily by calcination, at lower temperatures than are usually required. (to C. A. Hollingsworth. Assigned to Smith-Douglass Co., Inc.)

2,778,774 — A vaporizable space deodorant is absorbed onto an inert, granular material, such as exfoliated **vermiculite**, **attapulgit** or **fuller's earth**, and placed in a room to neutralize offensive odors. Vermiculite is preferred. (to D. Buslik.)

2,779,466 — A method of packaging **gypsum** wallboard so as to protect the edges without appreciably increasing the shipping space required. (to Z. E. M. Nuorivaara. Assigned to Svenska Tandsticks Aktiebolaget.)

2,779,469 — A centrifuge apparatus for recovering clean **sand** from gravel plant tailings is improved by the addition of a second inlet pipe that discharges clean water tangentially into the head. (to B. G. Harris.)

2,779,626 — An apparatus for spraying slurries of **gypsum** or **lime** plaster, **hydraulic cement** stucco, or the like. (to P. Dassetto.)

2,779,670 — An improved combination soil conditioner and fertilizer material is made by absorbing essential chemicals, for example nitrogen, potash, and phosphate compounds, onto expanded **perlite** particles, mixing the treated perlite with an organic material such as peat moss or carbonaceous shale, and drying. (to A. Le R. Burkett. Assigned, Combined Minerals, Inc.)

END

\*Copies of United States patents are available at a cost of 25 cents each from The Commissioner of Patents, Washington 25, D.C. For convenience, coupons, each good for one copy of any patent, may be purchased from that official at the rate of \$5.00 per 20-coupon pad or \$25.00 per 100-coupon pad.



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It works, too. The film, entitled, "*We're Blasting Near You*" has already been shown by contractors and quarry operators in many parts of the country, to audiences including PTA groups, civic organizations and service clubs.

The movie tells why blasting is necessary, and explains the steps you are taking to "be a good neighbor." It shows how millisecond delay techniques eliminate the old-fashioned, jarring explosions of the past, and

how modern blasting methods keep noise, vibration and flying rock to a minimum.

This unique film is accompanied by a kit of suggested news releases, sample speeches, safety posters and other helpful material—everything you need to conduct a successful meeting in your community. Plan now to get the important public relations benefits from showing "*We're Blasting Near You*." Write, telling us the approximate dates you'd like to schedule it.

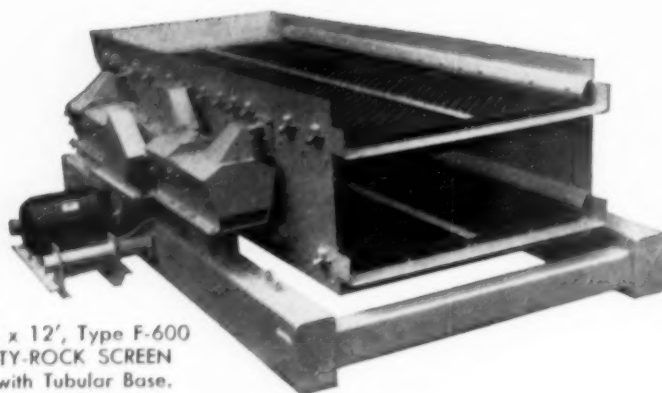


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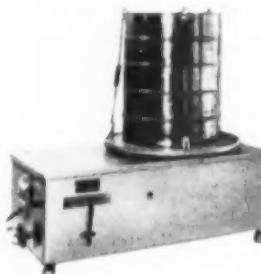
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## ROCKY'S NOTES

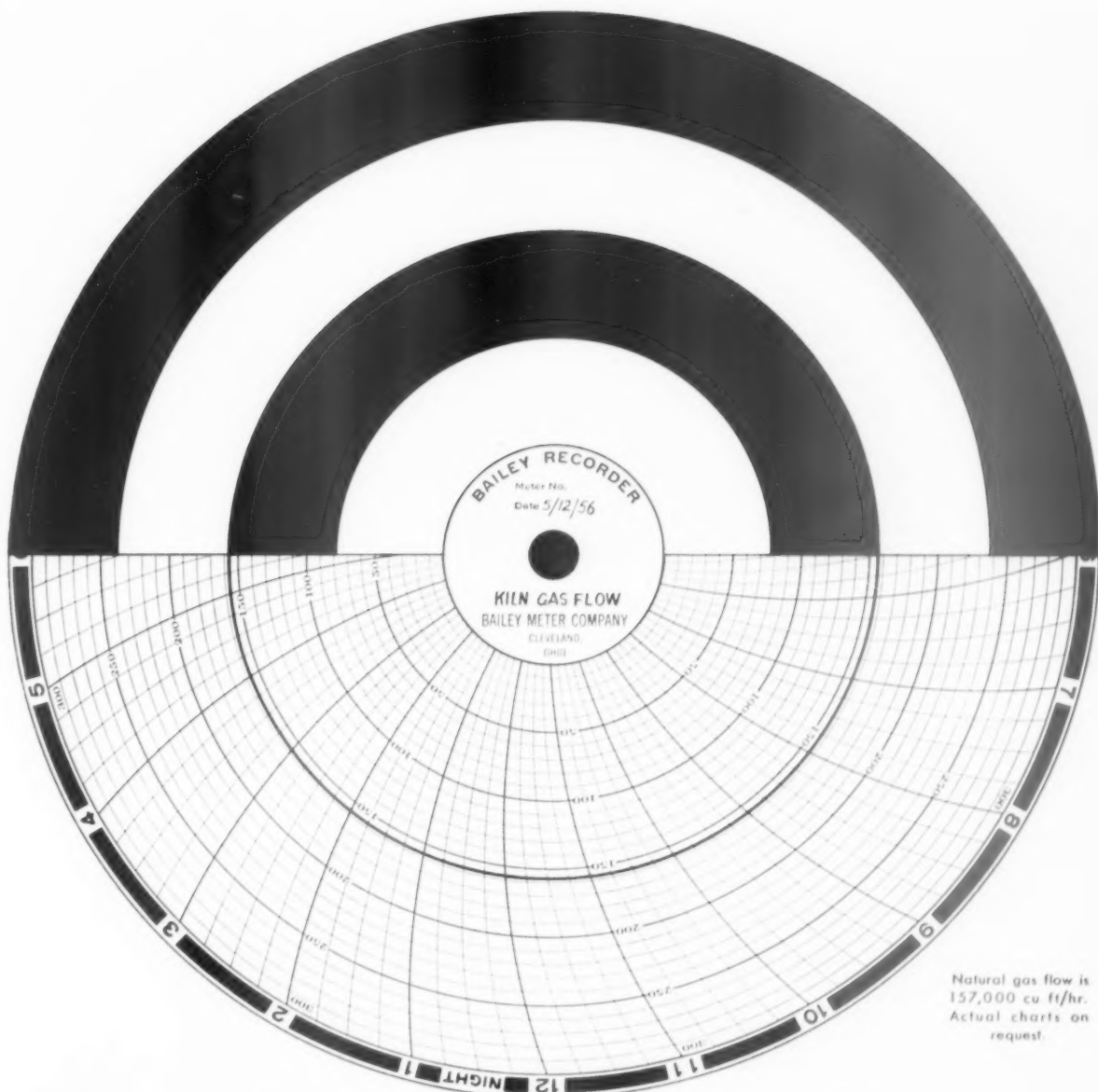
(Continued from page 29)

Jim was a bachelor and devoted much of his leisure time to studying and photographing birds—one of the outstanding authorities on ornithology in this country, a very great distinction for a mere layman among professors of natural history. A collection of these films, he once told the writer, he intended to leave to the Buffalo Natural History Museum, in which he was much interested. The museum was also to get the bulk of his estate. So, Jim got a great deal out of life while earning his livelihood in the crushed stone industry. In the beginning he had had experience as a railway location engineer, and entered the stone industry to supply railroad ballast.

So, we pass on and the world changes. Probably most of our readers have noted many changes in Rock PRODUCTS itself. Forty years ago, when the writer entered the picture, these industries had no medium for exchange of ideas or thoughts. Producers were individualists to an extreme degree. They didn't even know each other's names. The editor's job was to get acquainted with them personally and make them acquainted with each other, as well as with their industries. It was during the first World War, and these industries were stripped of the means of existence. There were many meetings of producers, state and national, and we tried to attend them all. Thus we became more a part of the industries themselves in our thinking than of the publishing industry which was our own.

Time, however, has made changes in business journalism as well as in the rock products industries. For many years we were pretty much the sole vehicle for keeping readers abreast of technical as well as business developments in our industries. We devoted nearly all our editorial efforts to running down anything and everything that looked new and interesting. Now the situation is somewhat different. There are large, strong and competently staffed associations which supply much of the technical information and incentive to greater progress that it was our aim to supply for so many years. Reader habits have changed. Management and technical staffs read more and varied publications, or perhaps they have less time to read anything. Anyway, the people who have kept up with progress in business and industrial journalism, as we endeavored to keep up with progress in our rock products industries, have decided

(Continued on page 194)



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• Bailey Automatic Kiln Control keeps your kiln at peak performance for days at a time with little or no supervision. The necessary know-how for the proper selection and application of instruments and controls by Bailey Engineers has been derived from experience, tests, and successful installations. Kiln temperatures, feed, draft, fuel, and speed

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Three other Dynaclones at this plant also play a star role in cement saving. They reclaim cement dust from three silo groups and from the distribution systems that supply them.

Lone Star has nearly 200 Sly Dust Filter installations at its plants throughout the country. The reason: Sly Filters are designed to do a better job—with no appreciable maintenance—on all cement mill applications. Find out how they can do a better job for you . . .

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## CONSERVATION PROGRAMS

(Continued from page 118)

In his state, a three-year study showed many soils still needed liming. That applied to the best corn land as well as to the poorer farm land in the state.

A midwestern agronomist feels this way about it: "I believe the soil test is a most important, educational, extension and sales promotion tool that agronomists and limestone salesmen can use in the proper recommendation and distribution of limestone." He pointed out, though, that a bottleneck in the program is created by the farmer who is late in having the test made and getting it into a laboratory. It was suggested that limestone producers should get together and plan a method of assistance to farmers to relieve the bottleneck.

It was flatly reported by one respondent that "limestone should never be applied in the absence of a soil test." He believes that mandatory soil testing has not hindered the use of limestone, but rather has promoted efficient use of it. "It is good soil management to test soil before applying limestone," he said.

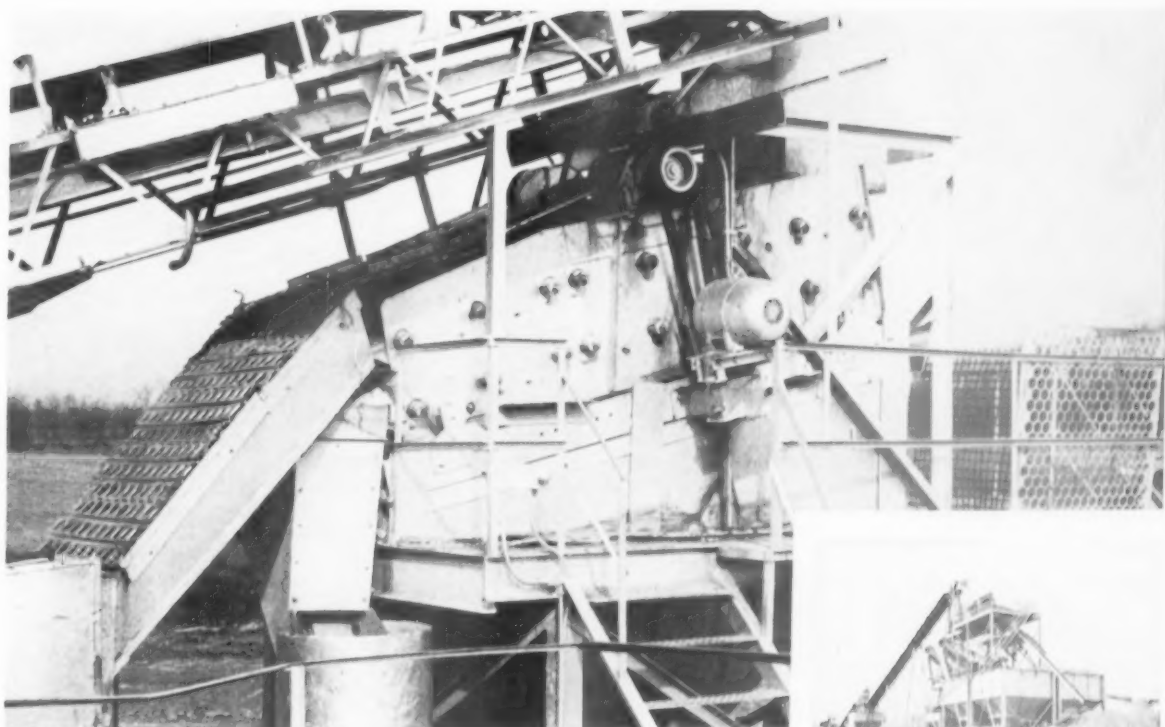
What's the opinion on the technique of testing? They're certainly good enough for general application, say the agronomists, and they are better than mere guesses. The consensus is that techniques have been developed to the point that there is no question regarding their desirability.

**Education and promotion.** Agronomists say that they have been preaching the value of agricultural limestone to farm lands for 100 years, and that every ounce of promotion is needed to reach the goals set by the conservation programs. It's the same story: much has been done, but much more needs to be done. Definitely, the active part played by producers in promoting use of liming materials has helped. But, some expressed the feeling that there are too few active lime salesman in the field.

The effect of good education and promotion is evident almost everywhere. Here's what happened in one state. Limestone use dropped from 90,269 tons in 1950 to 64,485 tons in 1955. An extensive cooperative program by the Extension Service, A.C.P. and limestone suppliers was formulated. The next year, 10,000 extra tons—15.5 percent more—were used. Further, another slight gain is expected for this year.

Another state went to work on the problem, mainly because a Cooperative Extension Service Project Leader sold producers and distributors on the

(Continued on page 181)



**"1,000,000 tons over this Deister  
in 6 years...repair costs  
15c per 1,000 tons!"**



That's what William H. (Bill) Miller of Miller Bros., West Milton, Ohio, has to say about his six-year-old Deister

4 x 10 double-deck Scalping Screen. He continues, "Our Deister has done a great job for us. Every bit of material we size is first sent across our Deister Scalper. The Deister makes finished stabilizer and sizes all of the aggregate before it goes into the washer. It can take up to 120 tons of raw feed or backrun gravel per hour. In addition, it handles the recirculating load from the two crushers that has run as much as 70 tons per hour. All told, we figure that we have run over 1,000,000 tons across this screen.

We figure replacement and repair costs on this machine at approximately 15c per 1,000 tons. After six years of hard service, we think this is a hard record to beat... real proof that Deister Screens are ruggedly built to run day after day, year after year without downtime."

If you are expanding or modernizing your operation, you, too, can benefit from such *exclusive* Deister features as Adjustable Slope Panels (independently adjustable at both feed and discharge ends to increase or decrease screening angle)... Unitized Life-Time Vibrating Mechanism... Opposed Elliptical Throw controls material movement on screen for greatest sizing speed and efficiency. Write Deister for recommendations on your screening problems.



Above, 6 year-old Deister Scalper owned by Bill and Dale Miller. Inset, Miller Bros. modern steel tipple at West Milton.

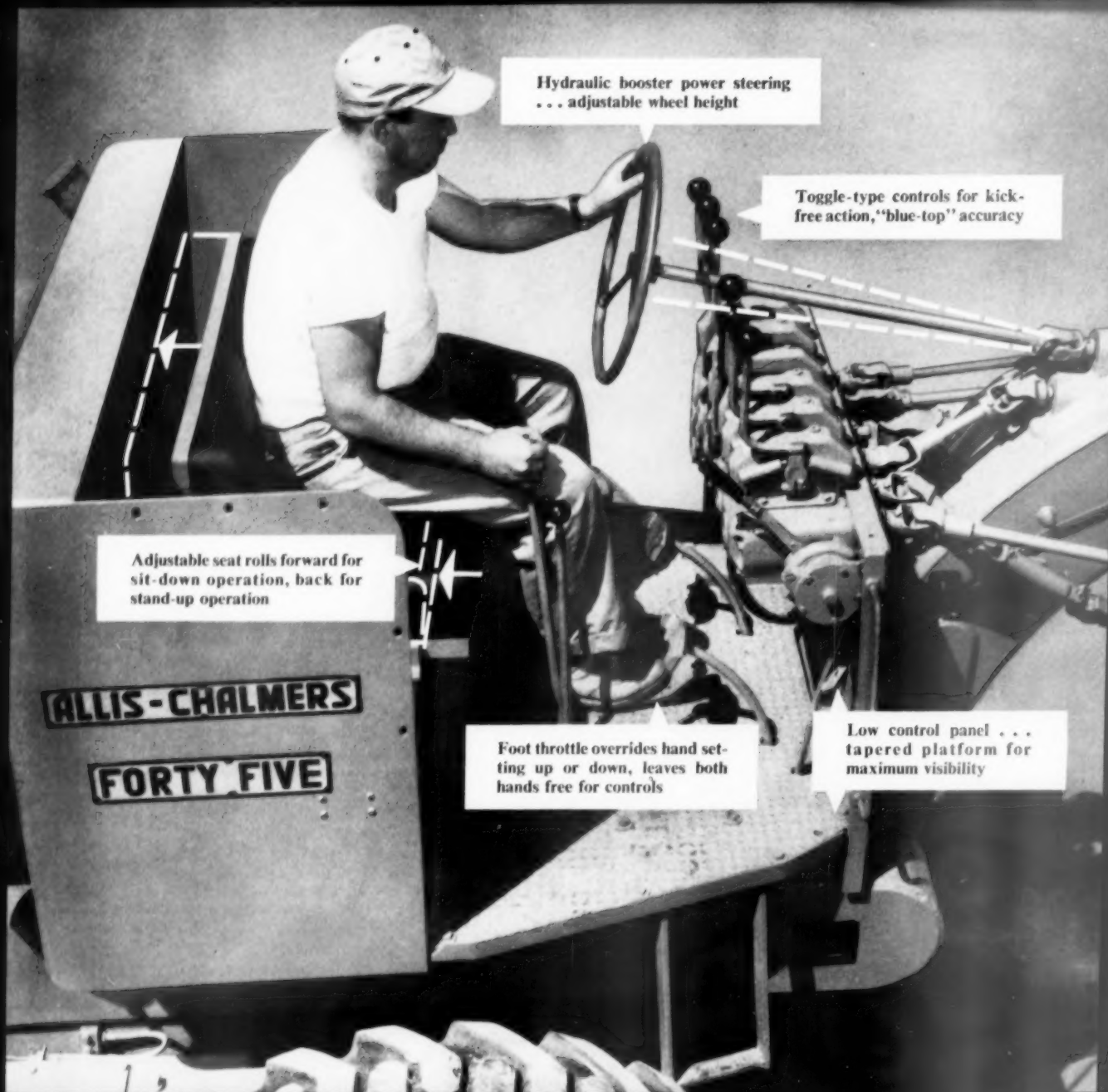
Below, Model UHS double-deck Deister Vibrating Screen, features side or transverse tension. Available in 3, 4 and 5 ft. widths; 10, 12, 14 and 16 ft. lengths; single, double, and triple decks.



Deister Vibrating Screens give maximum protection against downtime... assure maximum production to rigid specifications.



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*... through operator comfort and control!*

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• Used for repair of all types of damaged spots, edge wear and for covering metallic joints. Available in introductory kits or parts separately.

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**RUBBER REPAIR MATERIALS**

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## CONSERVATION PROGRAMS

(Continued from page 178)

idea that research holds the key to the solution of the "lime jinx," as it was called. First, a limestone producers' association was formed, to promote research. Next, a distributors' association was organized. Both have been successful. Farmers now are getting better service, educational literature is being distributed, soil samples are being taken for the farmers. Special decals have been made and are being used on trucks. As a result of this four-way cooperative move — involving producers, distributors, extension and research personnel—the agricultural limestone business in the state "has been re-born."

One of the best ways to promote the use of limestone by farmers, say some respondents, is to appeal to the economics of its use. In one state, research figures show that one dollar spent on limestone may return as much as \$19 in increased crop yields over the years to follow. This approach is simple and effective. "Any commodity which shows a high rate of return ought to sell readily without a subsidy," said one agronomist.

Some believe that best opportunities for increased limestone sales lie in the market beyond that covered by A.C.P. payments. It was suggested that producers should not have to depend upon what the program will subsidize. Quantity of limestone that can be bought under the program usually is limited. The farmer, if he can be given the facts, could use more limestone.

**The new soil bank program.** The Soil Bank program was passed by Congress only this past year. As with other governmental programs of this magnitude, a great deal of time is needed to get them going. Also, Congress still is holding hearings in an effort to get answers to many unsolved problems. The Soil Bank program is still in a fluid state. Consequently, the farmer and the producer have not had the chance to recognize the full import of the program.

Another article in this issue attempts to spell out what the program is and what it means to agricultural limestone producers. In our survey of agronomists, the question was asked about the possible benefits to the producing industry that may accrue from both the acreage and conservation reserve portions of the program, and what producers could do to promote the program.

It was agreed generally that both portions of the program provide a po-

(Continued on page 182)

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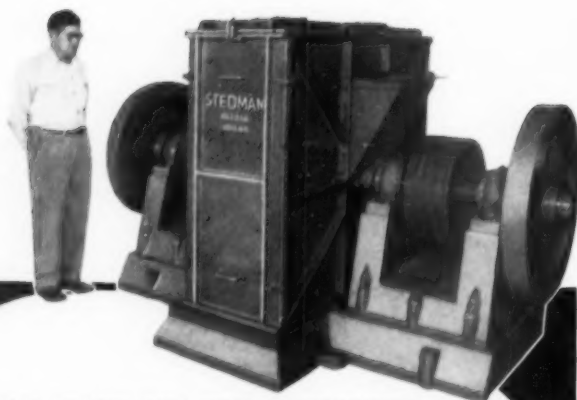
**LUBRIPLATE No. 630-AA** is practically a universal grease type lubricant. It was developed to meet industries' need for "simplified lubrication" . . . one lubricant to effectively satisfy a great number of requirements. LUBRIPLATE No. 630-AA has a smooth, stable consistency, a wide temperature range, possesses high film strength, fine adhesive properties and is water repellent. It satisfies most lubrication requirements, thus eliminates the need for a different lubricant for each application in many cases.

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**ARE THEY FREE OF SOFT STONE AND CLAY?**

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AND PASS ABRASION TESTS?**

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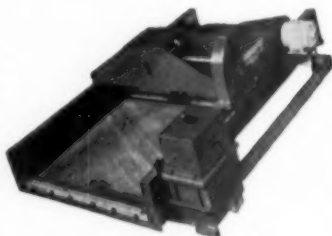
**Sets New Efficiency Standards**

For the screening of difficult, damp fines such as lime, ag-lime or silica sand, the new Leahy screen with Flex-Elex® Integrated Heat is unmatched in its ability to deliver high, accurately sized production at low cost. Flex-Elex is not an attachment . . . it is a fully integrated arrangement that completely eliminates bothersome flexible connectors while reducing maintenance and power consumption. Send for Bulletin 16-EH.

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Incorporated 1906

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## CONSERVATION PROGRAMS

(Continued from page 181)

tentially increasing market for agricultural limestone. This was covered fully last year (see **ROCK PRODUCTS**, April, 1956, p. 76).

Some difference showed up among agronomists as to whether the Soil Bank program was understood at this point. Most said it was not. It was pointed out that producers can help themselves and the farmer by passing information that A.C.P. payments do apply to many of the practices that can be used when land is put in the conservation reserve. As a producer, be sure that your field force understands the program, so that they can pass the word to the farmers for their education. Use of radio or television was suggested, since many part-time farmers cannot be contacted during the day, either personally or by other mass media. Another tip: "Local, state and national advertising and sales propaganda are the things that will increase sales of the limestone industry."

Increase of rental payments was the most consistent recommendation for a formula, under the conservation reserve program, that would get the job done. To put it another way, there is a need to increase benefits to the small operator who is losing a higher percentage of his total income when he leaves out unproductive land. Many large farms have lots of land that isn't adding to productive income; that land will be the first that is left out if paid income is involved. However, a small farmer has little land that is not contributing to his total income. Thus, it was suggested that the small farmer be given a much higher rate for removing his land from production.

Another suggestion was that the Soil Bank, by controlling production, will result in higher prices at a time when the conservation reserve acreage will be ready to produce bumper crops.

Another respondent said that soil conservation district supervisors have an opportunity and an obligation to see that their districts take full advantage of the program. Both parts of it have merit. Some land with a low productivity rate can be taken out of production, improved, then put back to crops. Other land that never should have been cultivated in the first place can be permanently removed.

One agronomist summed Soil Bank participation up this way: "The only way . . . is to make it so attractive financially that they (farmers) won't have to worry about losing money on a piece of land that they've agreed to keep out of production . . . regardless of how high farm prices go."

END

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**TURNS IN ITS TRACKS . . .** where many smaller loaders have to jockey.

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These are just four examples of how an Allis-Chalmers HD-6G tractor shovel offers a combination of strength, traction, flotation and mobility that enables it to replace a fleet of part-time specialized machines. You can count on it to boost production the year round. Ask your Allis-Chalmers dealer about the HD-6G . . . also the three larger tractor shovels with capacities up to 4 cu yd. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

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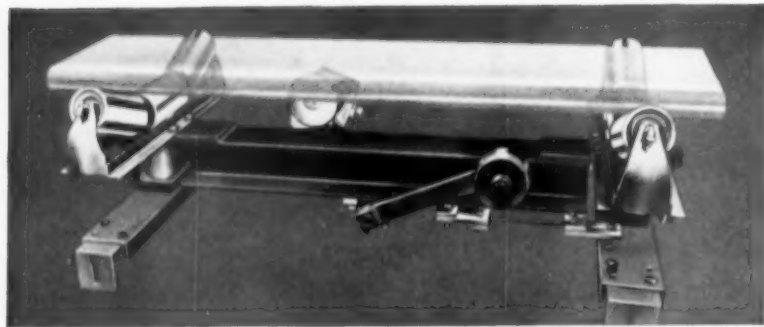
## Weigh it on the run ...with electronics

There are no labor costs to be charged against weighing when you incorporate a Fairbanks-Morse electronic scale in your belt conveyor system. The belt will be moving anyway, and might as well be accumulating the record of passing weight in the process.

Because it is electronic, the registering instrument of the new Fairbanks-Morse Electronic Belt Conveyor Scale can be located remotely—for instance in the office with the rest of your business and accounting machinery.

Accumulated weights are read on the remote instrument in digital figures, and there are other indicators to give you a running check on the general efficiency of your conveyor operation. A meter shows percentage of load at the given moment; another shows the rate of tonnage movement per hour.

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## LIME CALCULATOR

(Continued from page 99)

These are revealed by three cutouts on the circle.

To operate the calculator, the farmer moves the disc around until an arrow marked *I* is opposite the pH factor of his soil. He looks through the cutouts to see how much of the nitrogen, phosphate and potash he is using is effective before he adds lime. Then he checks the top of the disc till he finds the crop he wants to grow, and looks directly above that to find out how much lime he will need.

Thus a man who wants to grow alfalfa in sandy soil with a pH of 4.5 will find that he is now wasting about  $\frac{2}{3}$  of the effectiveness of his fertilizer, and that he needs to add  $3\frac{1}{2}$  tons of lime per acre to raise his pH to the 6.5-7.5 range considered best for the crop. If he moves the arrow to 6.5 and looks through the cutouts he will see that with this pH his fertilizer will be totally beneficial.

We had the calculators made in two sizes: one 22 x 27 $\frac{3}{4}$  in. for display and educational work, and the other 6 $\frac{1}{4}$  in. in diameter, for mass distribution. Though we are not a large company we do supply ag-lime to 24 counties in the central and northern part of Minnesota through dealers in the section. To cover this area adequately we ordered 250 of the larger calculators and 10,000 small ones.

We placed the large ones in each of the A.S.C. offices in our market area, in the county agents' offices, in high school and college vocational agriculture classrooms, and with each of the fertilizer dealers in our territory. We very carefully explained to each person receiving one just how the calculator operated and the advantages of using ag-lime. Then we left a large supply of the small calculators to give away to students, customers or anyone who inquired. We also used the small ones in mailings to farmers.

Where managers of government offices objected to displaying the calculator because our name was on it, we placed stickers over the name and still got the benefit of the educational work of the calculator. Everyone we contacted was willing to display it, and we have had many requests for them from places we had overlooked.

The soil department of the University of Minnesota has been particularly interested in the calculators because they feel that wide distribution of the calculator encourages soil testing by the farmers. Without knowing the pH of the soil a farmer can't use

(Continued on page 186)

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Though lightweight for easy handling, this hose won't snake or twist under pressure. It takes dragging... resists oil damage... withstands cracking at temperatures as low as 20°F. Tough Neoprene cover withstands all weather conditions.

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This all-purpose water hose is long on wear and value. Easy to handle, it has a black, high-grade rubber cover that resists sun, weather, cracking and peeling. Black, non-porous tube.

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"Beats a bigger rig we own!"

Here's another case where the low-cost BANTAM outproduces a larger machine. Palmer Sand and Gravel Co. of Jackson, Mich., uses this BANTAM T-35 to load from scattered points around the pit. Equipped with 1/2-yd. rehandling bucket, the BANTAM loads a 5-yd. dump truck in 1 1/2 to 2 minutes. With two 10-yd. trucks it loads out 450-500 yds. in less than 4 hours, averaging 120 yds. per hour! Commenting on performance, owner Ed Palmer says the BANTAM outstrips his bigger rig.

Regarding maintenance on BANTAMS, Ed Palmer says, "It just doesn't cost anything to run 'em." He now owns 3 BANTAMS—has been a user for 9 years. In all that time his only replacement cost has been one set of swing clutches and 3 sets of trunnion rollers. That's for all 3 machines!

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## LIME CALCULATOR

(Continued from page 185)

the calculator, but since it emphasizes the importance of this factor he is bound to want to determine it.

College and high school vocational agriculture instructors have welcomed the large and small calculators for classroom work. They say they can teach the class in several minutes what used to take much longer to explain, and that with this visual aid the student remembers the salient points much longer.

The student receiving one of the smaller calculators is going to operate it, study it and keep it, we hope, for future use. And he is almost certain to take it home to his father to show him what he has learned.

Our educational campaign has shown most satisfactory results; the calculator is a good business getter for us. Perhaps our idea will be useful to other agricultural limestone producers and to those interested in the conservation program.

END

## RIVER DREDGING

(Continued from page 106)

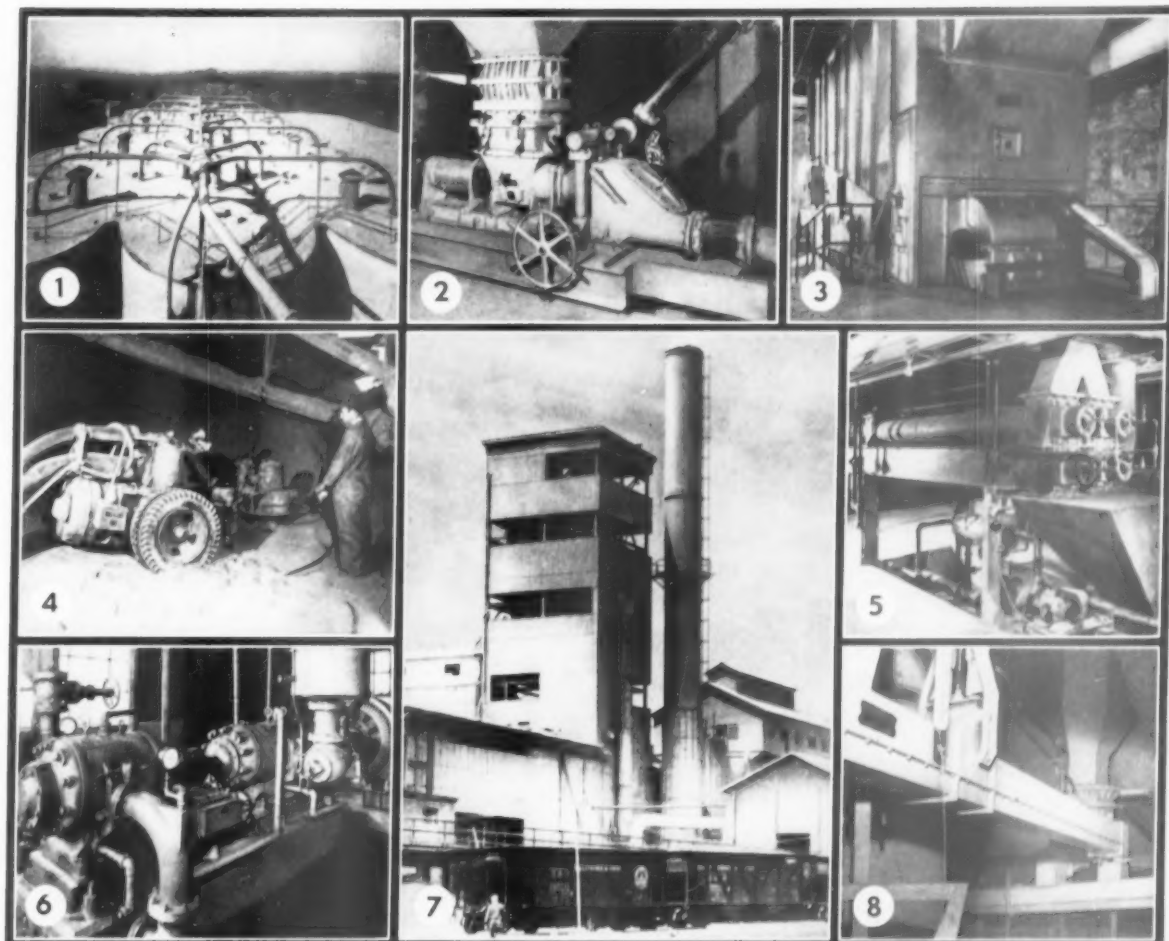
Montgomery building contractors are using large amounts of sand and gravel from the conveniently located plant which is only a few minutes' drive from the heart of the city. Local billing is done by the company's downtown Montgomery office, while other invoices are prepared by the general offices in Birmingham.

At present a field office and testing laboratory are located in a portable trailer at the plant site. However, construction will start soon on a permanent concrete and block, two-story office building and laboratory near the plant. The new building will house three offices and a laboratory.

W. N. Partridge is president of the company and directs the firm's operations in the area.

The key personnel of the new plant includes: B. N. Stewart, superintendent of operations; M. O. Howell, assistant sales manager (Montgomery Downtown Office); Charles Calhoun, assistant superintendent of production; and S. J. Collier, inspector. John Owens is plant office manager; N. R. Russell, dredge master; and J. Goodman is dredge oiler and helper. On shore, Frank Smith is lime dragline operator and H. M. Brewer is Koehring dragline operator.

END



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Feeders & Rotary Valves  
Material-Level Indicators  
Motion Safety Switch  
Aeration Units  
Slurry Valves

The experience of thirty years of research, designing, and building equipment for the chemical process industry, has given Fuller engineers a vast amount of "know-how", knowledge which is passed along to the user in better and more efficient equipment. Such experience is something that is difficult, if not impossible, to write into specifications or show on blue prints, yet is inherent in Fuller engineering and equipment.

This experience, and a large capable staff, place us in an excellent position to assist you in determining the most efficient equipment for conveying, cooling, and preheating dry pulverized and granular materials; application of compressors and vacuum pumps for handling air and gases; feeding and aeration of dry bulk materials.

Your first step toward achieving efficiency, at the lowest possible cost, is to call in a Fuller engineer to review your requirements and to make specific recommendations.

Bulletin G-3, "Fuller Equipment for the Process Industries", will give you a comprehensive preview of services rendered and equipment manufactured by Fuller. Write today . . . we'll gladly send you a copy.

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# Fuller



Schramm Truck Mounted Rotadrill drives right to the drill site—often where bigger rigs can't go. Drilling is a one-man operation; simply lower outriggers, raise mast and attach drill pipe and bit.

## ROCK DRILLERS PROVE ROTADRILL

# Fastest, most mobile of all rigs



Rotadrill makes it easy to handle and add lengths of drill pipe. Controls for starting, stopping, rotation, down pressure and rapid traverse are mounted conveniently near the mast. Fast vertical action of rotative head acts as pipe hoist for pulling drill string or adding pipe.



Heavy welded structural steel mast, raised and lowered hydraulically, is carried safely on crutch between jobs. Schramm Truck Mounted Rotadrill drives right to the drilling site—is ready for work in minutes.

Report after report confirms this fact. In the time it takes a conventional rig to reach the job, you can drive a Schramm Truck Mounted Rotadrill to the drill site, set up, and start making hole. In fact, Rotadrill will work where bigger rigs can't go.

Compact design and light weight give Rotadrill its mobility. Truck mounted, it's a self-propelled unit—easily maneuvered—driven and operated by one man. There's no cumbersome superstructure to erect and dismantle; consequently set-up can be made in seconds. And since it needs no ponderous machinery to transport or power it, Rotadrill can work almost anywhere—even at the edge of a quarry.

Rotary drilling with compressed air is the secret of Rotadrill's speed. This relatively new technique sets records on job after job. In actual field tests, Schramm Rotadrills make hole 600% to 700% faster than conventional rigs. And even in hard limestone areas, penetration rates are 55% to 66% better. Reasons: regulated hydraulic down pressure (up to 26,000 lbs) and immediate, continuous chip removal by compressed air. This lets the drill bite new rock instead of regrinding chips. Also, because we've eliminated Kelly bar and rotation table, adding and removing steels to the string is faster.

If you're drilling with a conventional rig, you'll find it worthwhile to investigate Schramm Truck Mounted Rotadrill. Send today for Bulletin TRD-56.

Your local Schramm Dealer is listed in the Yellow Pages of your telephone directory.

## Schramm, Inc.

MANUFACTURERS OF AIR COMPRESSORS

645 North Garfield Ave. • West Chester, Pa.

## SOMETHING NEW IN DRILLING

(Continued from page 103)

From location number one, three holes were drilled to depths of 30 ft. One hole was drilled to 18 ft. and another drilled to 12 ft. This was highly satisfactory compared to the maximum of 8 ft. of hole drilled by the jackhammer method. Two of these 30 ft. holes drilled by the Mighty Midget were at 45-deg. angles, the other holes at 15 deg. angles. This drilling location also showed the penetration rate of the Mighty Midget drill to be 1.02 ft. per minute or 61.2 ft. per hour compared to the jackhammer method of .04 ft. per minute or actual penetration of 16 ft. per hour. This showed the vacuum system to be much faster in this soft formation.

The scaffolding was moved to a higher location where five holes were drilled. Three of these holes were drilled to depths in excess of 30 ft. at 45 deg. Two were drilled to 20 ft. depth at 15 deg. Continuous sampling and core information was recorded as these production blast holes were drilled, thus adding to the original information when locating the deposits.

This gave the plant management an opportunity to see in advance the percentage of the material it would receive. At the end of the complete drilling operation there was no visible abrasive damage to the cutting tools, indicating that the cost of the bits and resharpening would be very small, an important factor in this case.

All of the footage drilled in the field test on these two locations was done within one eight-hour working day, as compared to the same amount of footage drilled by the jackhammer which would take a minimum of three days. There was no debris or removal of the blasted material as was necessary in the old method.

When comparing both methods, no samples were obtained with any of the drilling in the old system to determine the value of deposit and mine operation, while under the new method the operator was able to determine the percentage of calcium deposit as to the probable production and at what depths mining operation could begin. The big difference in cost was the penetration time and the time required to remove material after each blast.

In drilling with the Mighty Midget all holes were drilled at one time and one large blast was used to remove overburden and to open the pit. This showed vacuum drilling to be highly successful in this formation, not only for production drilling, but for reconnaissance exploration work as well.

END

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# LOOK TO DAYBROOK

... For a New Standard of Ruggedness on the "Rock Routine"!



The truck above was being backed to the edge of a quarry bank. The bank gave-way, causing the truck to roll end-over-end, coming to rest in an upside-down position. Within a few seconds after this picture was taken, the truck, equipped with a Daybrook Boulder Dam Style Dump Body, was righted and work resumed.

Daybrook Boulder Dam Style Dump Bodies feature sturdy wrap-around body construction—rounded inside corners for fast, clean dumping.

Daybrook Hoists are available in conventional arm, direct-lift, telescopic, and "Power-Up—Power-Down" models.

Daybrook builds a complete line of rugged hoists and bodies—well known for dependability in quarry operations.

Ask your distributor about Daybrook's built-in ruggedness on the "rock routine."



Daybrook Boulder Dam Style Body Model 1052 with Daybrook Speedlift Hoist Model 77-C-138.

SEND DAYBROOK LITERATURE CHECKED BELOW:

32



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HOISTS

POWER LOADER

EXCAVATOR BODIES—  
HOISTS

POWER GATE

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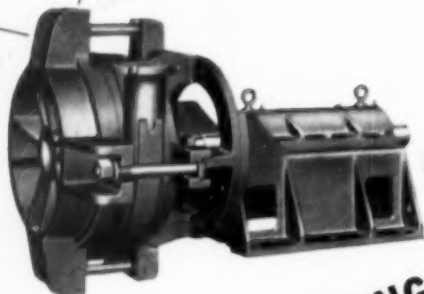
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*Speedlift*®  
**TRUCK EQUIPMENT**

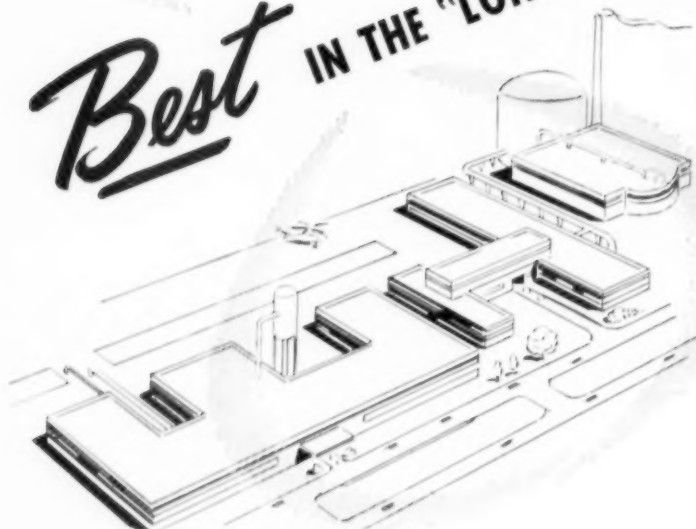
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*Best* IN THE "LONG RUN"...



## For a Trouble-free, Economical "Long Run" SPECIFY MORRIS PUMPS...

● The Morris Pump operating right now will continue to function efficiently for many years to come. Long periods of testing have proved that.

Every pump built by Morris Machine Works is extremely rugged, dependable, trouble-free; operates with minimum attention . . . cuts maintenance costs . . . can be quickly dismantled for inspection, avoiding lengthy and expensive lay-up time.

Exact engineering and design at Morris results in pumps that are *really* better in the long run; that give peak performance for both present and future needs.

● **FREE SERVICE** Morris engineers will gladly recommend the pump best suited to your size, capacity and specifications. Send necessary data today.

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**MORRIS**  
CENTRIFUGAL  
PUMPS

## STORY OF BARITE

(Continued from page 125)

relatively high. A constant head tank is used for jig make-up water and this tank is installed on top of the cylindrical ore bin serving the jigs.

The new mine and plant was designed and built by the engineering and construction division of Macco Corp. Two men operate the mine using a power shovel for loading. Two men can run the plant. No camp boarding house is maintained and employees live in trailers near their places of work.

To get the new plant into production as quickly as possible, an eight-diesel electric unit, formerly on a submarine, was installed. A Caterpillar D-13000 diesel-electric set is used as a stand-by. Later, purchased electric power will be used as power generated in the high Sierras is transmitted over lines nearby. Water for the operation is piped to the pond through a 2½-mile gravity line, and a pump delivers to the plant.

The Macco Corp. is one of the nation's well known contracting firms, having built some of the larger dams in the United States. Many large foreign jobs have also been handled by this company. Their interests are quite diversified. There are ten separate divisions or affiliates of the company, including the Pacific Crane & Rigging Co., the Belyea Trucking Co., a Refinery Division and the Drilling Fluid Division. The barite operations are a part of this, since all output goes into drilling muds.

For many years the company operated a barite mine and mill at Mesa, near Phoenix, Arizona. The Mesa plant also up-graded the mine-run. Froth flotation was a part of the beneficiation process at this plant. The plant also ground and sacked high grade barite for many industrial uses, but depletion of the Arizona deposit ended the venture.

Personnel of the newly started operation include William Paine, mining engineer as superintendent at the plant. James D. Hawkins is manager of the Drilling Fluid Division at Paramount, Calif.

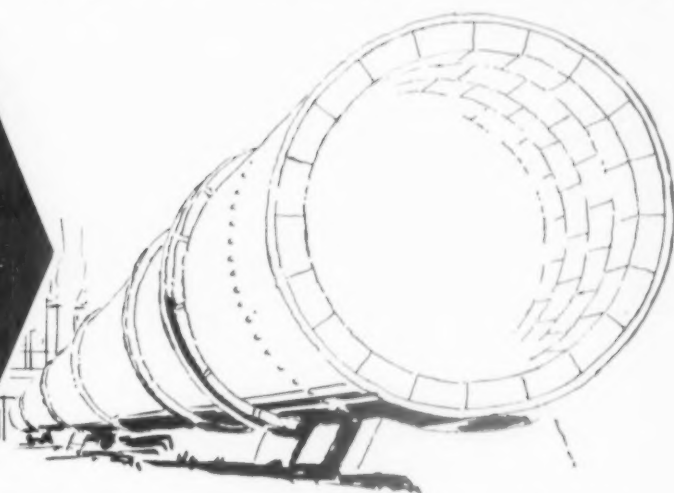
END

## Modernizes Power Facilities

RIVERSIDE CEMENT CO., Riverside, Calif., expects to conclude this month its modernization of power generating facilities there. New waste heat boilers and a new turbine have been installed and existing turbines and auxiliary equipment have been rebuilt.

# Higher Bulk Density... Lower Porosity

## the BIG PLUS in



### WALSH High Alumina Refractories

Quality control, spearheaded by better research and ceramic engineering, has been largely responsible for the plus values in Walsh High Alumina Refractories for the cement and lime industries.

Their composition of carefully graded and selected minerals, noted for non-shrinking qualities, is further enhanced by the dry press method of manufacture, imparting uniformity of size and shape.

Lower porosity and higher bulk density characteristics account for their increased tensile strength, consequent greater resistance to abrasion, and excellent non-spalling qualities—features that combine to insure better all 'round performance throughout a longer service life at elevated temperatures. Isn't this the kind of performance you've been looking for in your plant? Get the whole money-saving story from your Walsh representative, or write us for details.

#### WALSH HI LUMITE

60 & 70, Dry Press Process Firebrick (60% & 70% alumina content, respectively).

Uses: High temperature liners for rotary cement kilns and lime kiln linings.

Properties: Non-shrinking; low porosity; higher tensile strength that reduces refractory loss incurred when coating peels off.



#### WALSH WARCO XXD

High Duty Firebrick, Dry Press Process.

Uses: Cold and hot zone rotary kiln liners and lime kiln linings.

Properties: Greater resistance to abrasive action; higher bulk density; mechanically stronger; clean cut corners and edges... true to dimension.



#### WALSH MULLITEX D

Super Duty Grade Firebrick, Dry Press Process.

Uses: Intermediate zone liners.

Properties: Higher bulk density and lower porosity in super duty grade... resistance to thermal shock; greater resistance to abrasion.



*Specialists in refractories of high bulk density and low porosity*

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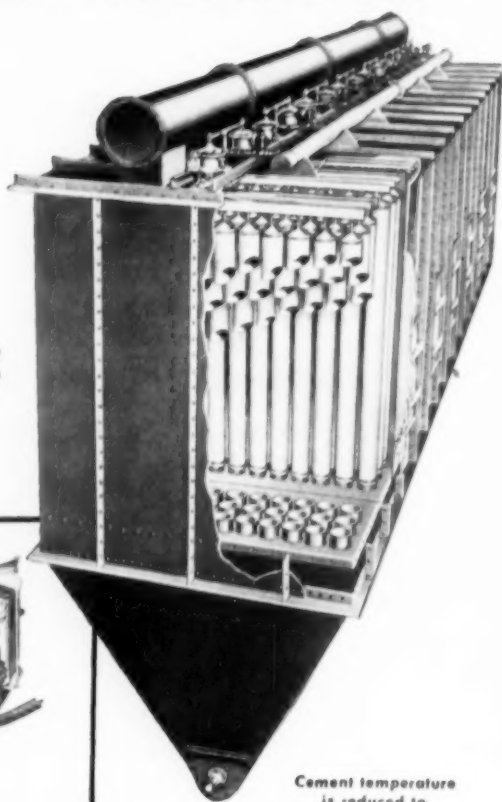
ROCK PRODUCTS, April, 1957

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# Norblo serves the Rock Products Industries well—

with  
**Efficient  
Large Scale  
Dust  
Collection  
and  
Cement Cooling  
in Production  
Process**



Cement temperature  
is reduced to  
200° or lower

Norblo's Cement Air Cooler and Dust Collection System (patented) combines two separate functions necessary for modern cement manufacture in one unit. The system cools both fines and tailings—eliminates higher temperatures that damage the finished product—and keeps temperatures inside the mill at more comfortable levels. Norblo Automatic Bag Type Dust Arresters with cyclic bag cleaning provide maximum efficiency of collection with low maintenance and operating cost. Remarkable results are achieved today in hundreds of American and foreign mills.

Norblo engineers have wide experience in the cement field and will give you a dependable survey and estimate on adapting Norblo cooling to your present equipment and layout. Write for Norblo Cement Air Cooler Bulletin.

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# Norblo

ENGINEERED DUST COLLECTION SYSTEMS  
FOR ALL INDUSTRIES

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## BATESVILLE LIME CO.

(Continued from page 134)

The overburden of chert, clay and cason shale ranges from 18 to 45 ft. in thickness.

The quarry face is 135 ft. deep and an average of 550 ft. wide. Blasting is done about every 60 days. Six-inch blast holes are drilled the full depth of the face using two Bucyrus-Erie churn drills. Usually 25 holes are drilled for each blast. Holes are loaded to within 12 ft. of the top using 70 percent Atlas Apex. Approximately 60,000 tons of reclaimable stone is brought down at each blast.

The power shovels used for stripping are also used to load the quarry stone into the 15-ton Euclid end dump trucks. These trucks dump into a 40- x 32-in. Pioneer jaw crusher which reduces the stone to approximately 5-in. size. The material then goes to a 4- x 12-ft. Cedarapids scalping screen. This takes out the minus 2 in. which goes to a stockpile if it is clean. If the stone is dirty it goes to an 18-ft. double screw Eagle log washer. This discharges into the 25,000 ton stockpile after passing over a 4- x 6-ft. Universal rinsing screen.

A reclaiming tunnel 140 ft. long extends under the stockpile. A 30-in. belt conveyor 225 ft. long runs through the tunnel and carries the limestone to a 125-ton tippie over tracks of the Missouri Pacific railroad. One shovel sample for each car is taken from the belt and sent to the Alcoa Laboratory at Bauxite. As the open hopper cars of 57 to 82 tons capacity are loaded under twin chutes from the tippie, the cars are weighed on Howe scales and when the brakes are released, allowed to move forward by gravity.

Quarrying operations of the Arkansas Limestone Co. went underground early in 1955 when open pit mining became increasingly difficult and uneconomical because the overburden was more than 100 ft. thick. The first entry for underground mining was drilled in February, 1955, using a jumbo made in the company shops. Later a Winter-Weiss jumbo with 27-ft. boom was put in service. This drills two holes at a time using Gardner-Denver 4-in. drifters.

There are now four entries 45 ft. wide and 29 ft. high. About 6,500 lin. ft. of tunnels have been drilled and blasted out. Deepest penetration into the mountainside is about 900 ft. toward the north. Pillars 50 ft. in diameter have been left.

Two faces are shot at 4 p.m. each

(Continued on page 194)



## Roebling Royal Blue Wire Rope will bend and bend and bend!

What's more, Roebling Royal Blue is *stronger* than the strongest wire rope previously available. It will do more work and last longer on *your* job. Call your distributor or your nearest Roebling office for full information about Royal Blue, the really better wire rope. John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

**ROEBLING** 

Distributors, Branches and Warehouses Throughout the Country—Subsidiary of The Colorado Fuel and Iron Corporation

ROCK PRODUCTS, April, 1957

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**2000-FT. H-R BELT  
LIFTS 35-TON LOAD  
UP AN 18° SLOPE**

National Gypsum Company's Shoals, Ind. mine has a Hewitt-Robins conveyor with the highest tensioned textile carcass conveyor belt in existence. Because of the terrific strength of this H-R Super Raynile belt, the 250 hp. motor and H-R Jones speed reducer can start this 2,065 ft. conveyor with a 70,000 lb. load on an 18° slope.

Here, as in hundreds of other installations, Hewitt-Robins engineered, manufactured and installed the complete bulk materials handling system. To find out how H-R products and services can help you, consult your classified telephone directory for the nearest H-R representative, or contact Hewitt-Robins, Stamford, Conn.



**HEWITT-ROBINS**

CONVEYOR BELTING AND IDLERS...POWER TRANSMISSION DRIVES  
INDUSTRIAL HOSE...VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

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**BATESVILLE LIME CO.**

*(Continued from page 192)*

day, 72 holes being drilled for each blast. Holes are loaded with American Cyanamid Semi-Gel 3 B in 1½- x 8-in. sticks with delayed electric detonators. Blast brings down 1,800 tons of rock per day for both faces.

Trucks take the limestone outside to a Link-Belt feeder hopper discharging into a 50- x 50-in. Universal Bulldog hammermill with a capacity of 350 t.p.h. The hammermill reduces the stone to sizes ranging from 3 in. down to dust. From the hammermill a 30-in. conveyor belt 200 ft. long carries the material to a 160-ton loading bin. The 200 ft. long belt can be connected by a chute to a 105 ft. long stacker belt discharging to a surge pile. When conditions permit, approximately 30,000 tons of stone are kept in the surge pile. Missouri Pacific railroad hopper cars filled under the loading chute, are weighed on Fairbanks-Morse 25,000 lb. beam scales installed under the tracks.

Louis R. Myers is president of the Batesville White Lime Co., the parent corporation and is also president of the two subsidiaries. Mrs. M. L. Stokes is treasurer of the parent company as well as the two subsidiaries.

Robert R. Ruetschi is general manager of the Batesville White Lime Co., Don Reynolds is superintendent of maintenance and construction, and Cecil Morris is plant superintendent.

C. W. Cobb is vice president and general manager of the Arkansas Limestone Co., while E. R. Nelson is quarry superintendent and W. A. Dobson is mill superintendent. J. T. Low is vice president and general manager of the Love Hollow Company.

**END**

**ROCKY'S NOTES**

*(Continued from page 176)*

that even an industrial journal must be attractively made up, and written in more popular language, to keep abreast in the publishing industry.

Perhaps too, the character of industrial advertising has changed much. Now the advertisements, prepared in most instances by specialists in industrial advertising, are so instructive and attractive that they compete for the attention of the reader with the so-called "editorial pages." Be that as it may, the ROCK PRODUCTS for which we are writing this is new and different; and we all hope will better fulfill its mission in this modern changing world.

**END**



*at Pacific Building  
Materials, Portland  
Oregon...*

## UP GOES ANOTHER SAND PREP

### *No. 8 in a series of steady WEMCO producers*

1956 addition to this Portland company's sand recovery operation is the 36-inch Wemco Sand Preparation Machine being installed above. It has an outstanding performance record to live up to! For instance, since the first of 7 similar Wemco units went into operation in 1948, plant manager Howard Hamlin reports that to date **"Only \$33 worth of spare parts have been ordered."** But the real story of Pacific's continued use of Wemco Sand Prepara-

tion Machines lies in their ability to invariably produce specification materials under all feed conditions. Wemco's slow-speed, multiple-pitch spirals, operating in a large, quiet pool, insure the recovery of the desired fine (150 mesh) sand without a sacrifice in raking capacity. This unbeatable combination of low-operating costs and specification sand spell profits for Pacific on every one of their 8 Wemco units. They can do the same for you.

Send Wemco your sand problems for profitable solutions.



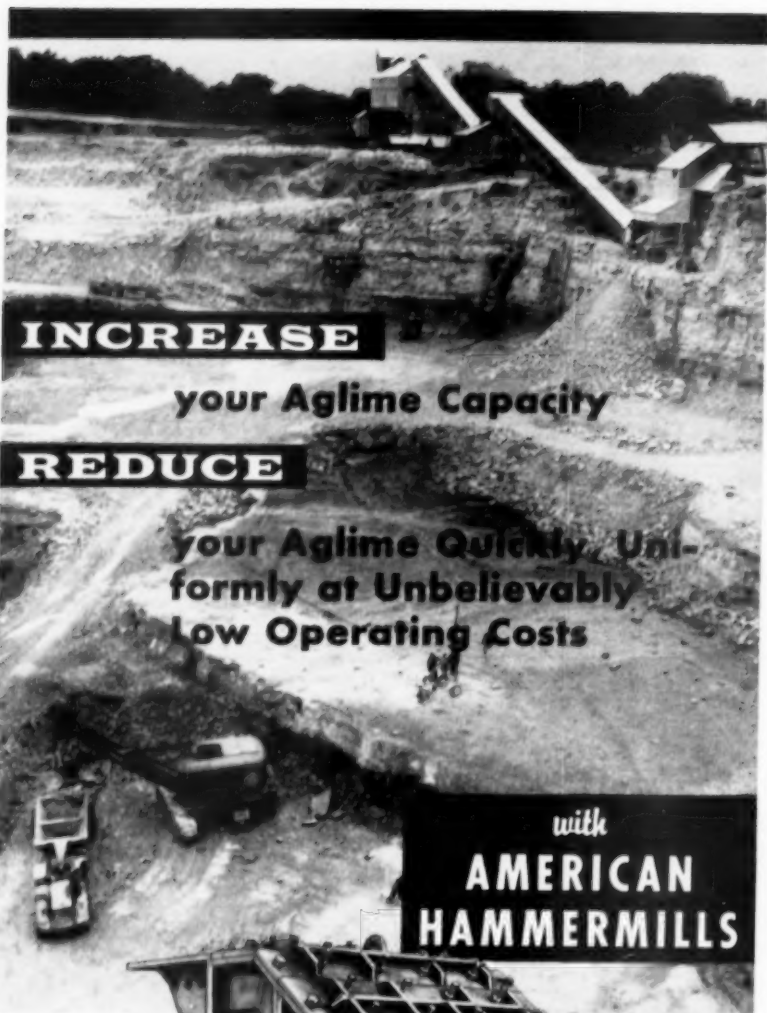
650-J FIFTH STREET • SAN FRANCISCO 7, CALIF.

*Representatives in principal cities of the United States and Canada and in major countries throughout the world.*

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ROCK PRODUCTS, April, 1957

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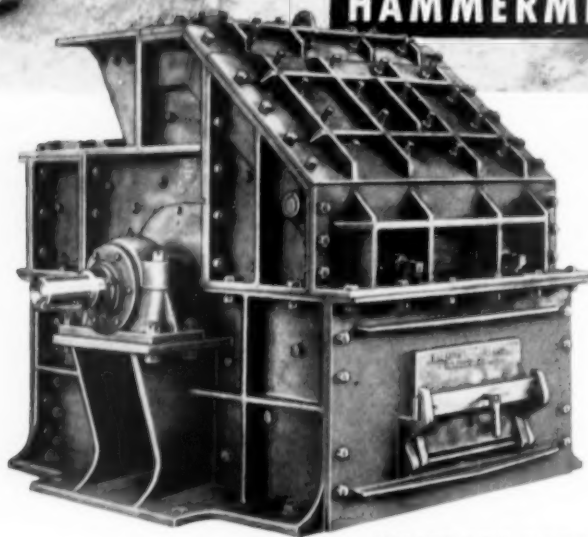
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**your Aglime Capacity**

**REDUCE**

**your Aglime Quickly, Uniformly at Unbelievably Low Operating Costs**

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**AMERICAN  
HAMMERMILLS**



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"BETTER STONE CRUSHING"  
WRITE for Coal Crushing Bulletin**

*American*  
**PULVERIZER COMPANY**

*Cooperatives and Manufacturers of Ring Crushers and Pulverizers*

1245 MACKLIND AVE., ST. LOUIS 10, MO.

## NEW LOOK

(Continued from page 144)

by the Swanson Engineering and Manufacturing Company, Inglewood, Cal., in cooperation with the engineering and operating staff of the Calaveras Cement Company.

The March, 1954 issue of *ROCK PRODUCTS* (page 70) described the kiln control system then still in the pioneering stages. The Formagraph is one of the latest and most progressive approaches towards a completely automatic kiln operation. It is a part of a continuous automatic system that includes the main control panel and measuring instruments, the graphic panel—all centrally located and in a dust-proof glass enclosure. The use of the system is expected to result in material fuel savings and more efficient operation as it increases the ease and convenience for the plant personnel in the performance of their duties.

One of the features of the control panel is the oxygen sampler and analyzer. The Arnold O. Beckman, Inc., Model F3 is the backbone of the oxygen instrumentation (see drawing). The sample tube in the kiln end housing acts as a primary filter by incorporating a packing of pyrex glass wool which prevents practically all dust from being drawn out with the sample. After leaving the tube, the sample is drawn along tubing to a diaphragm-type heavy duty pump. From the pump it goes to a water-jacketed cooler. The temperature of the sample is further reduced at this point while it continues on to a phase separator for the next cleaning step.

The phase separator, located near the analyzer, removes any remaining suspended solids and condensate from the sample, and provides a positive pressure which forces the clean sample gas to the gas selector panel and from there to the analyzer. It also provides a blowoff for excess sample, since a larger sample is quickly sent to the phase separator where only a small amount is diverted for analysis. By this method changes in excess air in the flue gas are measured and indicated with a minimum of sample time lag. The gas selector panel contains appropriate valves and a gas flow indicator for adjusting the flow of sample and standardizing gases to the analyzer.

The Arnold O. Beckman, Inc., Model F3 (dual range 0-5 percent, 0-25 percent  $O_2$ ) receives the sample from the gas selector panel at a flow rate of about 150-250 cc/min. The analyzer measures the magnetic susceptibility of the sample directly and pro-

(Continued on page 198)

**MURPHY DIESEL POWER all the way means...**

# LOTS OF ROCK FOR LITTLE ROCK!



• It's Murphy Diesel Power throughout for producing aggregate with this equipment owned and operated by Reynolds and Williams, Little Rock, Arkansas. The crushing plant consists of a Pioneer 153 PRL primary, an SP-101 intermediate crushing and screening plant, and a 154 VE secondary roll crusher. At right angles to the secondary unit a 30-foot discharge belt leads to a separate bin. The crushing and screening units utilize Murphy Diesel Models 11, 20, and 22, while power for ten motors on conveyor and feeder belts is supplied by a Model 122, 135 K.W. generator set. The Murphy-powered Northwest Shovel shown at the quarry face is one of several owned by this producer. Photos were taken in the Reynolds and Williams quarry near Alpine, Arkansas.

Whatever the size of your plant, you want maximum output at minimum cost. It's yours with Murphy's greater fuel economy, longer trouble-free life and dependability unmatched by any engine of comparable size.

Check with Murphy Diesel owners in your area—we number them among our best salesmen. Let them tell you how Murphy has improved their profit picture. Then get together with your Murphy Diesel Dealer before you decide on an engine.



**MURPHY  
DIESEL**

352RG

## MURPHY DIESEL COMPANY

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*Sales, parts and service throughout the nation*

### *Heavy-Duty Power for Rock Crushing*

Murphy Diesel Engines and Power Units are available in sizes from 96 to 264 H.P. Engine speeds are 1200 and 1400 rpm. "Packaged" generating units from 64 to 165 K.W.

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SCREEN CO.**  
Racine, Wisconsin  
Quality Screens Since 1919

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## NEW LOOK

(Continued from page 196)

vides a linear reading. This method of measurement is unaffected by any other gases which may be present in the sample. Output from the analyzer is 0-5 millivolts dc. and is fed to a standard recorder-controller. Other measurements which are included in the plan of the overall system for automatic control include firing zone temperature, draft and exit gas temperature.

Another facet to the company's expanding activities was the recent purchase of a majority of the stock in five transit mix and gravel producing companies in California's Central Valley. The Calaveras Cement Company previously operated through an affiliate, a ready-mixed concrete plant in Stockton. The five companies recently acquired are the Standard Materials Company, Inc., of Modesto; River Rock, Inc.; the Concrete Supply Company, Inc., both of Merced; the Merced Sand & Gravel, Inc., Atwater; and the Standard Rock Company, Inc., Escalon.

The firm also recently built a bulk loading plant to serve the Oakland-Alameda-Berkeley areas, at San Leandro. Car shipments are made to the new bulk plant from which truck deliveries are made. No sacking is done at the bulk plant.

The offices of the Calaveras Cement Company are in San Francisco. William Wallace Mein, Jr., is president; E. M. Barker, vice president; L. A. Parsons, consulting engineer. Grant W. Metzger is plant manager at San Andreas; M. C. Sutton, chief chemist and James Curry, plant metallurgist. Charles Dahle is public relations director for Calaveras Cement Company, with offices in San Francisco.

END

## PCA Bulletins

PORTLAND CEMENT ASSOCIATION announces that its recently published Research Department Bulletins include the following:

Bulletin 57, "Osmotic Studies and Hypothesis Concerning Alkali-Aggregate Reaction," by George J. Verbeck and Charles Gramlich, a reprint from *Proceedings, American Society for Testing Materials*.

Bulletin 62, "Investigation of the Franke Method of Determining Free Calcium Hydroxide and Free Calcium Oxide," by E. E. Pressler, Stephen Brunauer and D. L. Kantro, a reprint from *Analytical Chemistry*.

Bulletin 63, "Hydraulic Pressure in

Concrete," by T. C. Powers, a reprint from *Proceedings, American Society of Civil Engineers*.

Bulletin 68, "Porosity of Hardened Portland Cement Pastes," by L. E. Copeland and J. C. Hayes, a reprint from *Journal of the American Concrete Institute*.

Bulletin 69, "The Heat of Decomposition of Tricalcium Silicate into beta-Dicalcium Silicate and Calcium Oxide," by Stephen Brunauer, D. L. Kantro and C. H. Weise, a reprint from *The Journal of Physical Chemistry*.

Bulletin 72, "The Effect of Atmospheric Conditions During the Bleeding Period and Time of Finishing on the Scale Resistance of Concrete," by Paul Klieger, a reprint from *Journal of the A.C.I.*

Bulletin 75, "Specific Volume of Evaporable Water in Hardened Portland Cement Pastes," by L. E. Copeland, a reprint from *Journal of the A.C.I.*

## Canadian Asbestos Review

QUEBEC ASBESTOS MINING ASSOCIATION predicts that the Canadian asbestos industry will produce about 1,000,000 tons of asbestos fiber in 1957. This would equal the 1956 production, second highest year on record, and be one or two percent below 1955, all-time record year. The long-term outlook is for an increase of about 20 percent in asbestos fiber production by Canadian industry over the next 10 years, the association estimates.

A review of Canada's mineral industry in *The Financial Post* (January 19, 1957, p. 29) places a value of \$99 million on the 1,055,300 short tons of asbestos fiber produced in 1955.

## Netherlands Cement

POSTWAR CEMENT PRODUCTION in the Netherlands has increased greatly in the last few years and now is more than double the prewar production figure. Official figures are:

Year	1000 metric tons
1938	456
1950	593
1953	861
1954	972
1955	1101

Total Netherlands cement production in the first 10 months of 1956 amounted to 1,035,000 metric tons. Based on production trends, a 12-month estimate of more than 1,200,000 tons was made. Should projected figures of 1,300,000 tons annual production rate be realized in 1957 and 1958, Netherlands will be able to cover 50 percent of its consumption.



# Big Producer

## **Manitowoc 2-yd. Model 3000** **Moves up to 2500 yards in 8 hours**

Put a Manitowoc in your pit and watch daily production figures go up! That's what State Washed Sand and Gravel Co. of Milwaukee did when wet pit conditions called for a big output dragline. The company's 2-yd. Manitowoc Model 3000 rig with an 80' boom has handled as much as 2500 yards of sand and gravel in an 8-hour day. During the year-and-a-half on the job, machine downtime and maintenance has been negligible.

### **Big Production**

Advanced Manitowoc engineering has eliminated all but 17 gears and pinions for direct power flow from the engine to the bucket. This simplicity of design is possible with Manitowoc's exclusive sliding pinion arrangement which per-

mits the use of one set of clutches to drive travel, swing and boom hoist.

### **Greater Stability**

Long, wide-spread crawlers and a rugged, one-piece carbody give you the rock-steady stability needed for full-capacity buckets at long reach. A low center of gravity assures perfect balance for complete safety and top productivity. Large diameter roller path and big main rollers insure even load distribution and perfect stability.

### **Greater Operator Efficiency**

These optional features will enable your operator to always work at top capacity: *Torque Converter* tailors power output to the need. You get smooth perform-

ance in every phase of operation. *Air Controls* make operator's job easier, less fatiguing without destroying important "feel" of the rig. *Swing Brake*—manual or air type—slows swing speed and holds the unit in exact position for precise spotting.

### **Compare Manitowoc!**

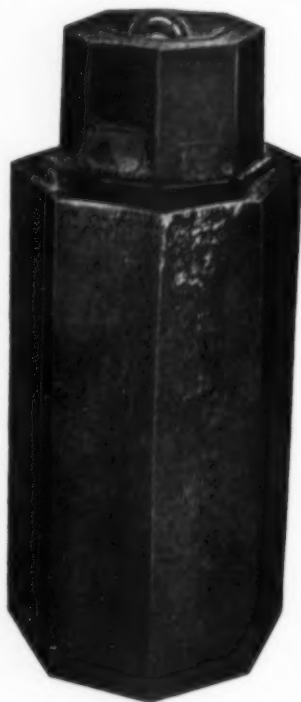
Your helpful Manitowoc distributor has complete information and specifications on the Manitowoc Model 3000. Compare this unit with comparable rated rigs and you'll put a Manitowoc in your pit today!

MANITOWOC ENGINEERING CORP.  
MANITOWOC, WIS.



Enter 1416 on Reader Card

## More Tonnage



### "Cape Ann" Forged Steel Drop Ball

Ruggedly designed and drop tested to insure maximum breakage. Lifting link protected by deep recess to minimize cable replacement. Adaptable for swivel or shackle.

Used by leading quarries for economical secondary breakage.

**2000 to 12000 lbs.**

*Prompt Shipments*

*For further information write—*

**Cape Ann Anchor &  
Forge Co.**

Post Office Box 360  
Gloucester, Mass.

Enter 1440 on Reader Card

## NEW MACHINERY

(Continued from page 86)

### Truck Crane

HARNISCHFEGGER CORP., Milwaukee 46, Wis., has brought out a 45-ton truck crane expressly designed for over-the-highway use, P & H Model 575-TC. The new carrier was designed and built to meet state codes by distributing weight over a greater number of axles. The 96,000-lb. truck crane features a twin front-axle arrangement with hydraulic steering boosters. Where necessary, removal of counterweight, outriggers and floats will reduce gross weight to 70,000 lb., resulting in less than 18,000 lb. per axle bearing load, the company states. P & H 487C diesels, powering both crane and carrier, develop 180 hp. at 1800 r.p.m.

Enter 311 on Reader Card

### Rotary Drill



ROBBINS MACHINE AND MANUFACTURING CO., Inc., Oneonta, Ala., announces a new dry-type rotary drill, designed for a tractor-mounted application. The Robbins drill can handle bit sizes from 5 to 12 in. It features mechanical drive, with power supplied by the rear power takeoff of the tractor through a Fuller K8 or K11 transmission, with four speeds forward, one reverse. Through a chain drive, the transmission powers a right-angle connection to a square shaft running the height of the drill unit. The square shaft powers a sliding gear box which rotates the drill steel at speeds between 25 and 120 r.p.m.

Two 8-in. hydraulic cylinders operating off a 70-g.p.m. hydraulic two-stage pump driven from power takeoff of the tractor operate a rack and pinion that raise and lower the drill pipe by two chain sprockets, providing the down pressure on the bit. The 225-gal. hydraulic system has a tank capacity of 150 gal. A 600-c.f.m. air compressor forces air into drill pipe to blow chips away from drill bit.

ROCK PRODUCTS, April, 1957

The drill mast is hinged and can be quickly broken over, making the unit portable on a low-boy. The unit has drilled in soft shale up to 15 f.p.m. and is reported to drill 100-f.p.h. or more in average hard sandrock. In the illustration, the Robbins rotary drill is mounted on a Caterpillar D8 tractor.

Enter 312 on Reader Card

### Hydraulic Lifting Jack



WESTERN RAILROAD SUPPLY CO., 2428 S. Ashland Ave., Chicago 8, Ill., has added a 100-ton, two-speed hydraulic model lifting jack to the line it recently purchased from the Buda Division, Allis-Chalmers Manufacturing Co. Model 100B-12 (illustrated) has a lifting height of 6 1/8 in., and is designed for handling extra heavy loads as found in erection of heavy equipment, machinery moving, etc.

To permit rapid engagement of the load, the jack is equipped with a tandem pump. By actuating both high-speed and high-lift plungers, the operator can quickly bring the ram in contact with the load. Using the high-lift plunger alone, the load is then lifted. Dual release valves in the base can be operated from either side. The jack base is drilled and tapped for a pressure gauge. This is an optional feature.

Enter 313 on Reader Card

### Drill Hose

HEWITT-ROBINS, INC., 666 Glenbrook Road, Stamford, Conn., has developed Duroil air drill hose. It contains a Buna N Tube said to be resistant to oil and oil vapors, a braided rayon cord carcass and a cover of natural rubber with tensile strength exceeding 2000 p.s.i. The product, recommended for heavy-duty use in quarries and mines, will be available in 500-ft. reels and in diameters of 1/2, 3/4 and 1 in.

Enter 314 on Reader Card

(Continued on page 288)

# MORE POWER ~~TO~~<sup>for</sup> YOU!

How the EXTRA POWER in the NEW BAY CITY  
ONE YARD SHOVEL HELPS YOU



260

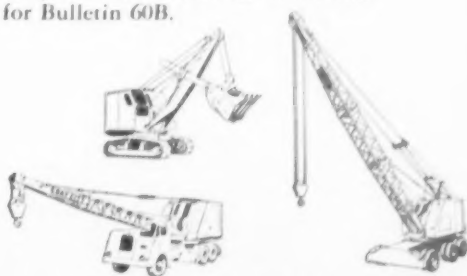
The *greater power* and greater strength built into the new heavy-duty BAY CITY one yard-shovel results in smoother, faster operation for you. There's *greater power in the engine*: a big 113 H.P. Diesel assures you of the ability to get in and out of tough places, to dig hard materials with ease, and to maintain a fast, smooth digging cycle. *Power steering* through cone clutches which actuate brakes, gives you superior maneuverability: you can make sharp or gradual turns in either direction while the machine is in full

motion . . . you don't have to stop to throw out jaw clutches or set steering brakes. *Power Boom Hoist* on the BAY CITY raises and lowers boom always under power, and the *Power Dipper Trip* makes dumping much easier and much faster. In addition, the BAY CITY has *Power Booster Clutches* which take fatigue out of operating and give you bigger yardage. Put this powerful BAY CITY to work. Get further information today, from your local dealer or write the factory for Bulletin 60B.

BAY CITY SHOVELS INC. • BAY CITY, MICHIGAN

## BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS



Enter 1453 on Reader Card

ROCK PRODUCTS, April, 1957

201



This Bucyrus-Erie 6-cu. yd. 150-B loads out granite in California.

## In California . . . and the world over Quarry Operators Who Demand Performance Get it with Bucyrus-Eries

From the treads up, Bucyrus-Erie electric shovels are heavy-duty units with proved high output performance in tough rock.

Their modern design includes an exclusive two-section boom with tubular dipper handle, providing unusual strength with minimum excess weight. Minimum deadweight results in fast work cycles, more payloads every shift. The strong mounting provides a solid foundation for tough quarry service.

Ward Leonard electric control provides extra fast acceleration and deceleration to speed work cycles, assures plenty of extra torque and power when it's needed.

Write for complete information on why Bucyrus-Erie shovels are preferred for tough quarry operations.

149L57

### BUCYRUS-ERIE COMPANY

SOUTH MILWAUKEE, WISCONSIN

Enter 1524 on Reader Card



## NEW MACHINERY

(Continued from page 200)

### Industrial Switcher



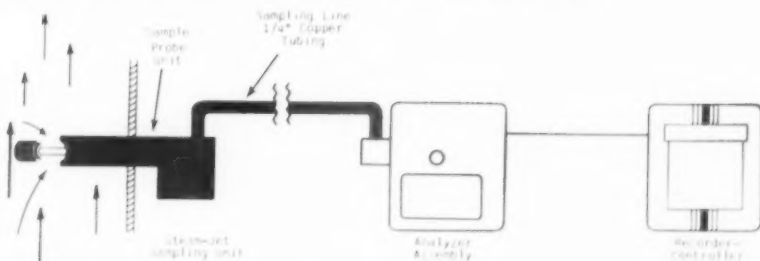
THE PLYMOUTH LOCOMOTIVE WORKS, Plymouth, Ohio, subsidiary of The Fate-Root-Heath Co., has introduced a new line of medium-duty switching locomotives using the cab-in-front design. Models are offered in the 25- to 40-ton weight range with either four- or six-wheel drive. Named the Plymouth Torqomotive, the line features a hydraulic torque-converter coupled to a Plymouth transmission. A choice of diesel engines is offered, along with optional equipment to suit particular needs.

Enter 307 on Reader Card

### Puncture Sealant

UNITED RUBBERTEX CORP., 260 Madison Ave., New York, N.Y., has brought out Rubbertex, an asbestos base liquid puncture sealant developed for injection directly into tubes or tubeless tires while the tire remains on the wheel. The material is nonflammable and is said not to affect operation of the tires or tire valves.

### Flue Gas Monitor Adjusts Fuel-Air Ratio



LEEDS AND NORTHRUP CO., 4975 Stenton Ave., Philadelphia, 44, Penn., has designed a flue gas monitoring system for fuel-air combustion equipment which employs analysis of the oxygen content as a measure of excess air, and automatically adjusts fuel-air ratio to maintain optimum combustion.

It has four basic components: One or more probe units for gas sampling; a gas cleaning unit for each probe; magnetic-type oxygen analyzer assembly; and electronic recorder-controller for oxygen.

Enter 310 on Reader Card

(Continued on page 205)

Enter 1444 on Reader Card



### Variable Speed Motor

STERLING ELECTRIC MOTORS, INC., 5401 Telegraph Road, Los Angeles 22, Calif., announces extended bearing construction on the speed reducer of Slo-Speed gear motors and Speed-Trol variable speed motors with reducer. Increased radial load capacity and rigidity are said to have been accomplished. Ratings will complete the line through 15 hp. Speeds are furnished from 350- to 20-r.p.m. in both constant and variable speed models. The length of the bearing is indicated by the dotted line in the illustration.

Enter 308 on Reader Card

### Hoists

R. G. LETOURNEAU, INC., 2399 S. MacArthur, Longview, Texas, has introduced a new line of re-designed hoists in capacities from 3 to 15 tons. The two principal features of the line are low headroom and precision load control. The low headroom is achieved by a flat-lying U-shape arrangement of the motor, gear box and drum. The motor and drum are parallel-mounted on the same side of the gear box, permitting the load block to retract between them. Built for all-weather operation, the hoists are being made available with plain trolley, hand-gear trolley, motor trolley, deck, lug and hook mountings.

Enter 309 on Reader Card

## A COMPLETE REFRACTORIES SERVICE... for Rock Products

Whether it's a portland cement plant, a lime plant, a gypsum plant, or a kiln for burning dolomite and magnesite—we can supply all of your refractory requirements.

Here are some Grefco refractories which should prove of particular interest to you:

#### RITEX MAGNESITE BRICK

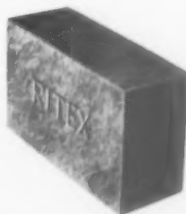
— a patented, chemically bonded basic brick for lining the burning zone of rotary cement, dolomite and magnesite burning kilns subjected to service too severe for high alumina brick linings. RITEX also has applications in many vertical (shaft) limeburning kilns.

**STEELKAD BRICK**—a RITEX basic brick with steel plates already attached. It may provide major savings in your operation.

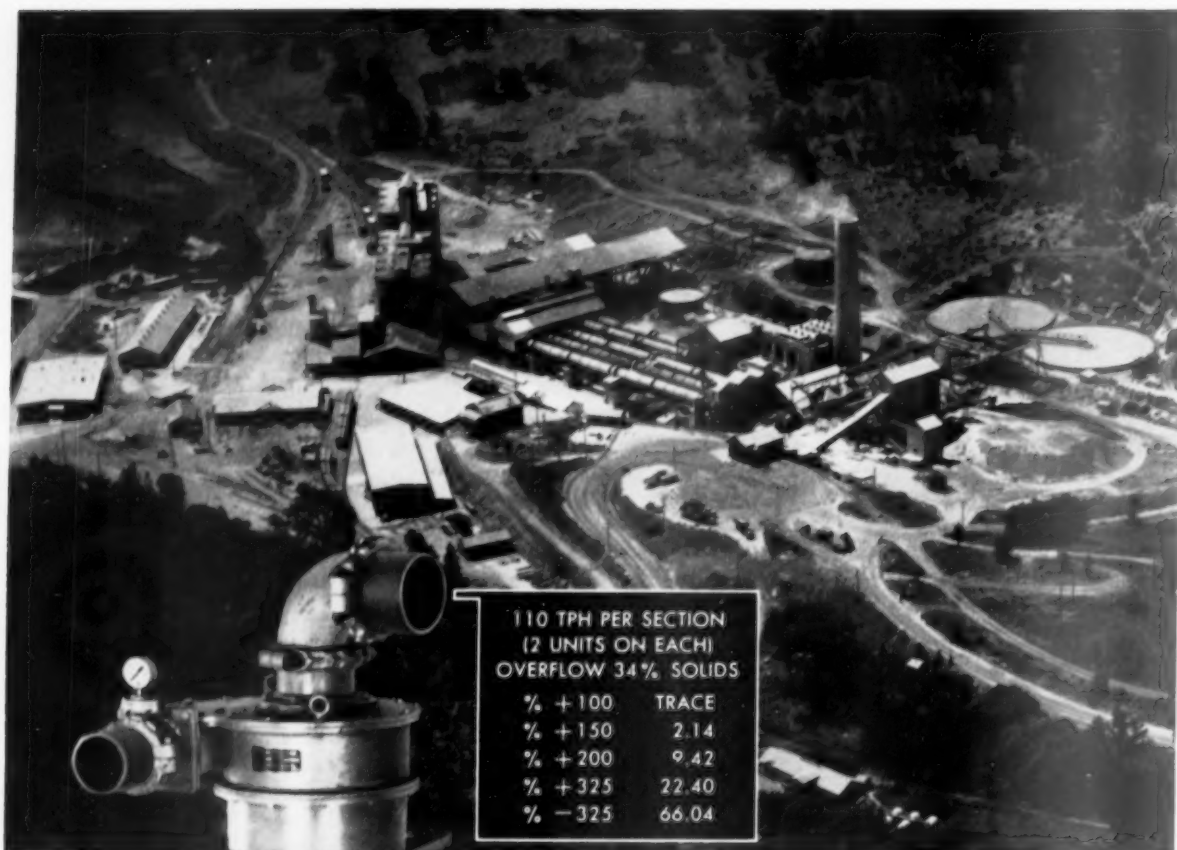
**HIGH ALUMINA BRICK**—These come in a full line of shapes and sizes. ARCO-70 (70% Alumina) is most generally recommended, though brick ranging from 50% to 85% Alumina can also be furnished.

As part of our complete refractories service, we have developed cements, mortars, plastics and castables for the service conditions which have proved long-lasting and economical. They meet all the varying requirements of dry or wet application and cold or hot sets. Delivered in cans or bags of various weights.

GENERAL REFRACTORIES CO.  
Philadelphia 2, Pa.



# GENERAL REFRACTORIES



**closed-circuit classification  
to 88% -200 mesh at 34%  
solids with Krebs Cyclones**

Calaveras Cement Company, the largest mine ever to operate in California's historic Mother Lode, makes another major contribution to milling technology. In 1956, capacity per section at Calaveras was stepped up from 80 to 110 tons per hour. This called for better classification. Krebs Cyclones, model D20B, especially fitted to meet the objectives were installed. Tramp sizes in the final product are only a trace on 100 mesh even with high density at 34% solids compared to a previously fluctuating 11 to 16% solids. Only 26% as much water is required. Kwh per ton for classification and pumping to the thickeners has dropped 38%. Pressure requirement at cyclone inlet is 11 psi. Krebs Cyclone operation is simple; grind-out time on shutdown is eliminated. Maintenance after a year has been negligible.



**EQUIPMENT ENGINEERS INC.**

41 SUTTER STREET

SAN FRANCISCO 4, CALIFORNIA

Manufacturers of Krebs Cyclones, Valves and Clarkson Feeders

## NEW MACHINERY

(Continued from page 203)

### Brake Blocks

THE S. K. WELLMAN CO., Bedford, Ohio, has announced a new line of all-metal brake blocks designed for heavy-duty, intermountain motor transports and off-highway equipment. Made from powdered ferrous metals and wear-controlling refractory elements, the friction material is said to show no fade on high-speed stops or continuous downhill braking.

Enter 305 on Reader Card

### Tractor Shovel Equipment



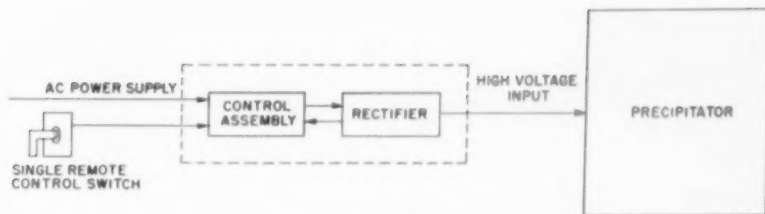
CLARK EQUIPMENT CO., Construction Machinery Division, Pipestone Road, Benton Harbor, Mich., announces a new high-lift bucket for the Michigan Model 175A tractor shovel, as well as General Motors diesel engines as optional power plants on Models 175A and 125A.

The new bucket increases dumping height of the bucket by 3 ft. 7 in. and raises the lower edge of the bucket to 12 ft. 1 in., making it possible (see top photo) to load gondolas and high-sided trucks directly. The lower illustration contrasts height of standard Model 175A with a similar tractor shovel fitted with the new bucket.

Detroit Diesel Model 4-71 is offered for the Michigan 175-A. Rated at 147 brake hp. at 2200 r.p.m., displacement is 283.7 cu. in., and maximum torque is 366 lb.-ft. at 1600 r.p.m.

Michigan 125A tractor shovel is equipped with the Detroit Diesel Model 3-71, a 3-cylinder, 212.8-cu. in. engine rated at 105 b.hp., 2200 r.p.m. Maximum torque is 275 lb.-ft. at 1500 r.p.m.

Enter 306 on Reader Card



### Automatic System of Precipitator Control

RESEARCH-COTTRELL, INC., Bound Brook, N.J., has brought out a new automation system for electrostatic or electrically powered precipitation equipment which eliminates manual

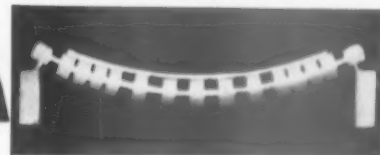
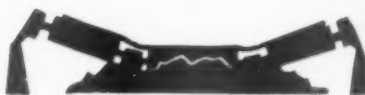
and visual electrical controls, replacing them with continuously acting feedback servo-circuits.

The diagram illustrates how the system (Continued on page 206)



*We've been asked...*

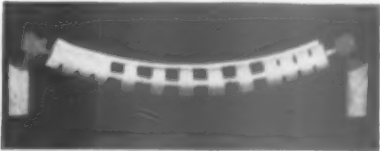
"WHAT IS THE JOY LIMBEROLLER BELT CONVEYOR IDLER?"



Radically different from all other idlers, the Limberoller is a flexible steel cable suspended between two bearings... neoprene discs are molded to the cable... forming a single roll idler which turns on its own axis. This imparts a flexing action which is self-cleaning... prevents material buildup, a source of trouble with conventional idlers.



Supports the belt throughout its entire width... doesn't have the unsupported gaps left between the rolls like conventional idlers. Increases belt life 20% and more. Materials don't "bump along" from idler to idler, either.



Two bearings, instead of six. They are up out of the dirt zone, not hiding down under the belt. Joy has never replaced a single bearing due to normal failure. Heard enough? There's more... get the whole story from Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa. In Canada: Joy Manufacturing Company (Canada) Limited, Galt, Ontario.

**JOY**

...EQUIPMENT FOR ALL INDUSTRY

WSW L0031-100 Write for free bulletin 160-27

CONVEYORS • AIR AND GAS COMPRESSORS • FANS • BLOWERS • ROCK DRILLS • BLAST HOLE DRILLS  
HOISTS • ELECTRIC PLUGS, RECEPTACLES AND POWER DISTRIBUTION SYSTEMS

ROCK PRODUCTS, April, 1957

Enter 1439 on Reader Card

205

# HYSTAWAY® FOR PIT OR QUARRY OPERATIONS

## Secondary Breaking

Hystaway crane, equipped with up to 5,000-lb. drop ball efficiently handles secondary breaking.

## Jetty Stone and Rip-Rap

Handling and loading oversize rock accomplished with speed and economy with the Hystaway crane.

## Crusher Repairs

Lifting and positioning screens, motors and other parts, Hystaway helps speed repairs.

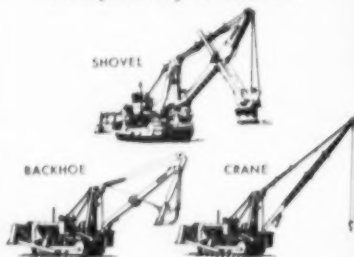
## Clean-Up

Standard front-end bulldozer makes fast work of floor clean-up, haul road construction and maintenance.

Hystaway mounts on Caterpillar D6, D7 or D8 tractors.

**FULL TRACK-TYPE  
TRACTOR MOBILITY  
NO TAIL SWING  
FULL 240° SWING**

For details, call your Caterpillar-Hyster Dealer.

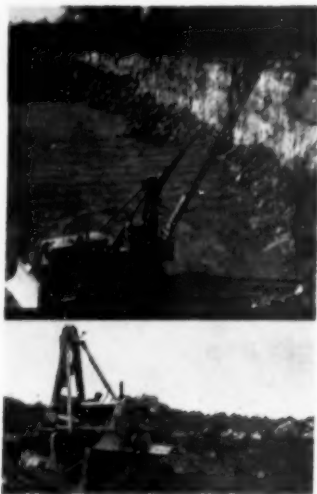
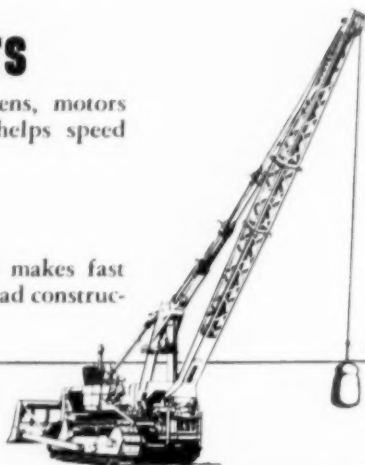


Hystaway is a registered trademark of Hyster® Company  
Caterpillar is a registered trademark of Caterpillar Tractor Co.

LIFTING CAPACITIES		
Tractor	Standard Boom Length	Capacity at Min. Radius
D8	35'	9,200 lbs.
D7	30'	7,600 lbs.
D6	25'	6,200 lbs.

FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

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**HYSTER COMPANY**



2918 N. E. Clockamas St., Portland 8, Oregon  
1818 N. Adams Street, Peoria 1, Illinois

## NEW MACHINERY

(Continued from preceding page)

tem operates. The electrical control assembly is placed in operation by a single start-stop switch. The control assembly then monitors and adjusts spark rate to maintain optimum voltage and power input. This is done by a continuously operating feedback loop that compares actual current, voltage, and sparking conditions in the precipitator with ideal, present reference levels.

Enter 331 on Reader Card

## Testing Vibrator

WHEELER CO., INC., 2408 Harrison Street, Topeka, Kan., has designed the Wheeler testing vibrator for grading of coarse or fine material. Aggregates ranging in size from 2-in. to 200-mesh can be given a sieve analysis, as the machine accommodates sieves of 6-, 8-, 10-, 12-, or 16-in. dia. Three anchors are used, consisting of a hinge connection at the bottom, a sleeve-type turnbuckle, and a threaded rod with hooks and lock nuts, which adjusts to the height of the nest of sieves being used. The action of the machine is said to provide the same degree of agitation regardless of diameter or height of the sieves.

The portable machine weighs 120 lb. All moving parts except the turntable are completely housed. A 1/4-hp. motor mounted on a sliding base and equipped with a variable speed pulley drives the machine.

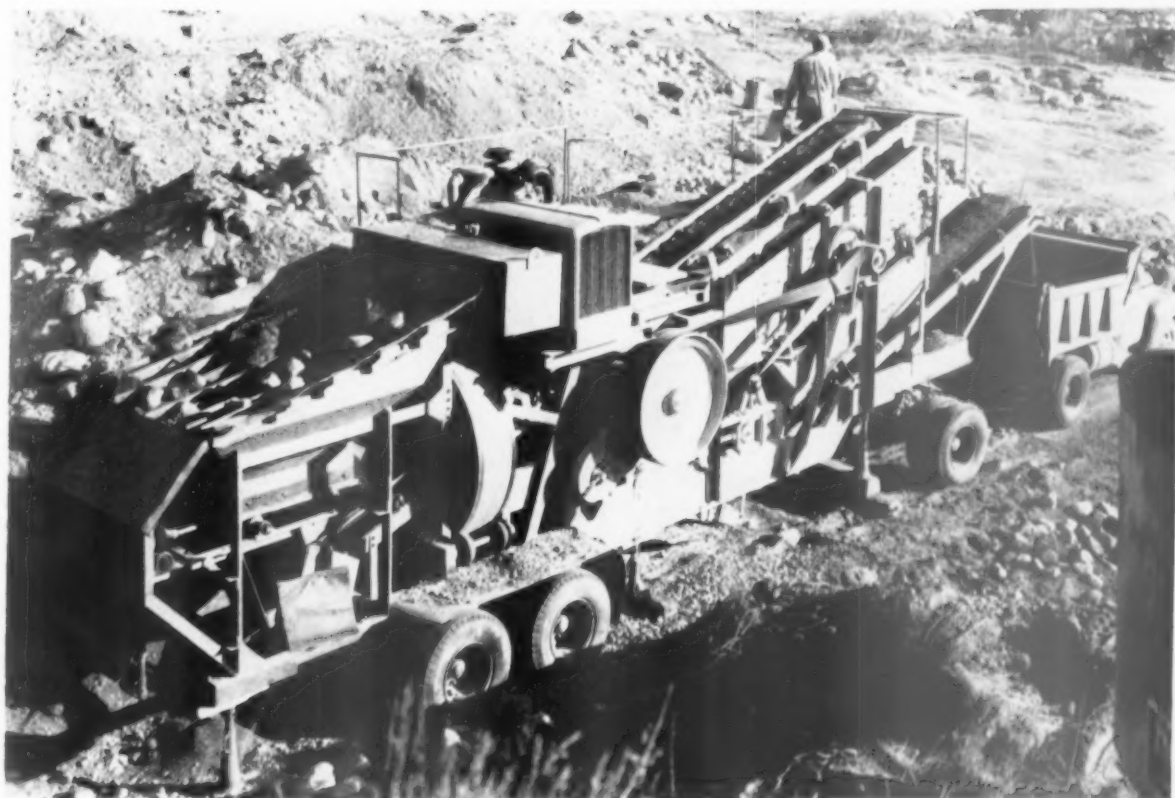
Enter 332 on Reader Card

## Front End Loaders



SUPERIOR EQUIPMENT DIVISION, Superior Pipe Specialties Co., P.O. Box 341, Wheeling, Ill., has announced a new line of tractor-mounted front-end loaders. Model H228, il-

(Continued on page 208)



Pit-run material being shovel loaded into hopper of Diamond 66 plant. Hopper is equipped with grizzly for scalping and plate feeder for regulating flow to plant conveyor.

D-449

**Built to keep you in business . . . at a profit**

## DIAMOND PORTABLE Rotor-Lift Crushing Plants

Here's how this modern equipment . . . providing uniform crush under all conditions . . . can keep you on the profit road month after month . . .

- line-flo system moves material through plant without delay—no extra scalpers, no by-passes, no bottlenecks.
- rotor-lift recirculates material fast, distributes it without batching or bunching on feed conveyor.
- long jaw design of jaw crusher handles the hardest of rock, gives maximum size uniformity.
- high speed roll crusher steps up output by eliminating reruns through jaw crusher, has high capacity for its weight, requires low h.p. per ton produced.
- balanced vibrating screen does thorough job of separating materials without clogging, can be depended upon for long, trouble-free service.
- belt conveyors run on antifriction bearings, move material quickly and smoothly.

Add to these advantages the well-known Diamond full maneuverability for road or pit. And . . . remember . . . every one of the five Diamond Rotor-Lift Plants out-produces all other machines in its class. In fact it regularly exceeds its own rating. No wonder your Diamond is bound to be a money maker for you.

*Before you decide . . . see Diamond.*

### DIAMOND IRON WORKS

*division*

#### GOODMAN MANUFACTURING COMPANY

Halsted Street and 48th Place • Chicago 9, Illinois



A Diamond portable plant is always ready for the road, meets highway requirements in all states.

D-406

**Everything For The Aggregate Producer**  
Jaw Crushers • Roll Crushers • Conveyors • Screens  
and Washers • Feeders and Bins • Portable and Stationary Crushing Plants For Rock and Gravel

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## NEW MACHINERY

(Continued from page 206)

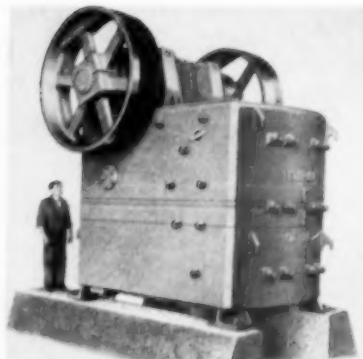
illustrated, demonstrates the features which include a tubular frame, part of which acts as an hydraulic oil reservoir, and bucket rams which are mounted so that they cannot "spring." Hydraulic piping is enclosed in loader arms for protection. The loaders are said to have strong "pry-out" action and they can be mounted on most models of low silhouette four-wheel industrial tractors.

Enter 333 on Reader Card

### Dragline Buckets

PAGE ENGINEERING CO., Clearing Post Office, Chicago 38, Ill., has introduced a line of "A" series Page automatic dragline buckets, in capacities from 1/2 to 3 cu. yd. Features incorporated in the series include a heavy, one-piece bottom plate, two position hitchplate, flared sides, forward arch, reversible tooth points and heat-treated alloy steel hoist and load chains. Buckets of the "A" series are available in light-medium, general-purpose and heavy-duty classes.

Enter 334 on Reader Card



### Jaw Crusher

SMITH ENGINEERING WORKS, Milwaukee, Wis., is introducing a new jaw crusher with 42- x 48 in. opening. This larger capacity primary crusher is built to be fed by a large shovel; it will take bigger rock and produce increased capacities.

The crusher has a two-piece, double wall, box section welded steel frame and cast steel swinging jaw with large cylindrical roller bearings throughout. The mechanism is said to have vigorous force feed and effective crushing action designed to turn out a uniform and cubical product. Other TelSmith jaw crushers are available in 10 sizes.

Enter 335 on Reader Card

### Bulk Materials Control

HARDY SCALES CO., 5701 Atlantic Blvd., Maywood, Calif., announces the "Robac," fingertip dial selector which permits remote control in bulk materials handling. The electronic automation device is designed for plants which handle granular, powdered or liquid bulk materials and is said to be adaptable to plants of all sizes and capacities.

Enter 336 on Reader Card

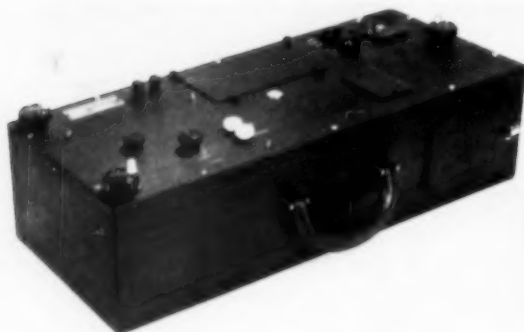
### Drilling Unit

PENNDRIILL MANUFACTURING DIVISION, Pennsylvania Drilling Co., 1205 Chartiers Ave., Pittsburgh 20, Penn., has developed Model B. Testborer. Sub-surface drilling, augering, driving and core drilling are provided by one portable drilling unit. Performance standards claimed for the Testborer include augering to 150 ft.; driving pipe and casing to 150 ft.; driving soil samplers with a 30-in. free fall hammer blow; and core drilling to 500 ft. The unit is trailer-mounted and has a 6-ft. hydraulic feed, four-speed rotary unit, four-speed hoist, 19-ft. derrick and automatic driving mechanism.

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END

## NEW! . . . Portable BLAST and VIBRATION SEISMOGRAPH by Sprengnether



### KEEP YOUR OWN PERMANENT RECORDS!

#### Features:

- \* Three Components
- \* Completely self-contained
- \* Portable—35 lbs.
- \* Transient or Steady-State Vibrations in

Entire instrument is self-contained in rigid aluminum case—25 x 10 x 8 inches. Uses basic seismometer system. The three components are adjusted to 0.75 second. Timing lines are placed across record at 0.02 second. Instrument operates to give accurate record of displacement of ground as vibrations pass recording site.

Interpretation service available by engineering seismologists.

Send for Free Data Folder.  
W. F.

**SPRENGNETHER  
INSTRUMENT CO., INC.,**

4567 SWAN AVE., ST. LOUIS, MO.

Mfrs. of Seismological, Geophysical Instruments



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## SPRENGNETHER SEISMOGRAPHS



SALES, RENTALS AND  
INTERPRETATION  
SERVICES BY  
ENGINEERING  
SEISMOLOGISTS

WRITE FOR OUR DESCRIPTIVE BROCHURE

**THE VIBRATION ENGINEERING CO. (Inc.)**

301 Hazleton Nat'l Bank Bldg., Hazleton, Pa.

Enter 1557 on Reader Card

## SERVICE TO THE CEMENT INDUSTRY

\*WRITE, CALL OR WIRE

- For experienced, dependable mason crews to expedite your Lining requirements.
- For the best in workmanship to expedite your pneumatically applied Linings.
- For dependable suspended arches and walls and anchored construction.
- FOR ECONOMICAL LINING OF New and old Kilns, Hoods, Coolers, Housings, Waste Heat Boilers and other appurtenances.

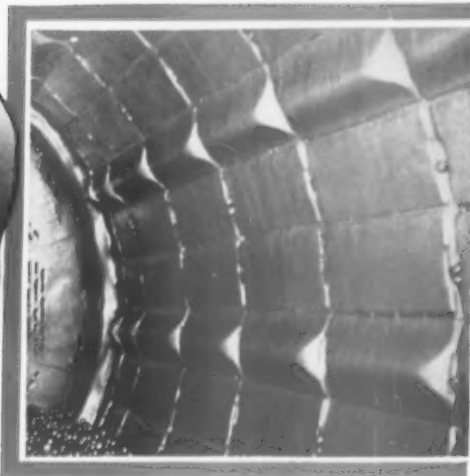
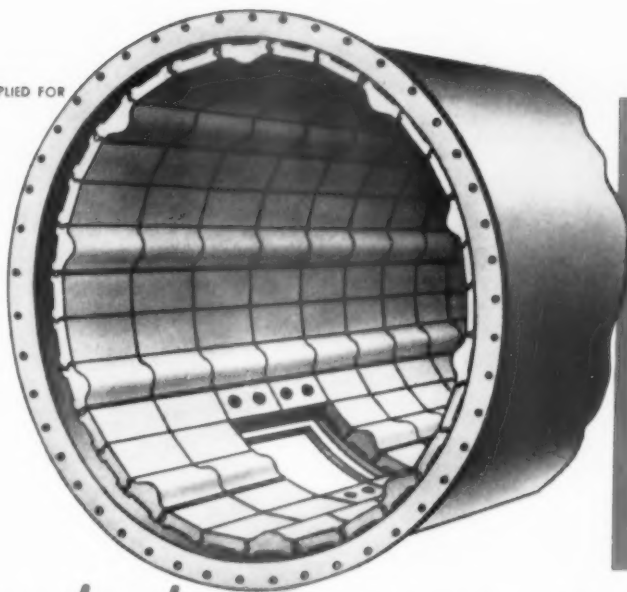
\* **GEO. P. REINTJES CO.**

2517 JEFFERSON ST. KANSAS CITY, MO.,—PHONE—HARRISON 1-3570

Enter 1558 on Reader Card

Enter 1559 on Reader Card

PATENT APPLIED FOR



## *Standardize* WITH B&W UNIVERSAL LINER PLATES

**SAME CASTING FITS ALL MILL SIZES**

**B&W LINER PLATES RAISE PERFORMANCE, LOWER COSTS**

The new B & W Tube Mill Liners have advantages that mean reduced costs in capital, time and labor.

Cost per ton of material ground is reduced, for the practical reasons listed below. Check them—you may find that one, or a combination, of these qualities will solve your existing problems.

- Lower Initial Costs—No pattern and chiller costs—the result of standardization.
- Longer life of liners—Uniform wear will result from better quality control on a mass production casting, utilizing permanent molds. Size is ideal for uniform chill and heat-treatment.
- Longer life for different applications can be realized by a selection of proper materials. This design lends itself to either chilled irons or wear steels.
- Direct labor cost and the "down-time" to install the liners are reduced. Castings are easily handled due to small size and weight. Less fatigue of workers. No cranes needed to handle lightweight liner castings.
- Cost reduced for storage space. Minimum storage space required as small castings "stack" easily.

Records simplified with one design of casting interchangeable for all size mills.

- Saves money on liner inventory. One design fits all diameters of mills, permitting standardization. Quicker unloading and storage possible.
- Savings in breakage claims and delays for replacements. Hard brittle irons are frequently broken in shipment when large castings are used. Small castings are rugged and almost impossible to break by handling.
- Savings in determining most efficient wear pattern. Same castings will produce wear profiles consisting of all lifter ribs, all flats or combination of both, including straight or spiralled lifter pattern.

Liners are supplied in two nominal thicknesses, 1½" and 3" with 1½" high lifters. Castings are 6" wide x 12" long. Positive seating of small castings on mill shell means less breakage of castings under operating conditions. For additional information on B&W Universal Tube Mill Liner Plates, write The Babcock & Wilcox Company, Process Equipment Department, Barberton, Ohio.



## MANUFACTURERS NEWS

The Lith-I-Bar Co., Holland, Mich., announces that the controlling interest in the company has been acquired by Leonard O.



**Leonard O. Zick**

Zick, industrialist of Kalamazoo, Mich., who is now president, treasurer and general manager of the firm. Mr. Zick recently resigned as president, treasurer and general manager of Allen Electric Co.

Kennedy-Van Saun Mfg. & Engr. Corp., New York, N.Y., has completed erection of a new research and test laboratory to be used in conjunction with its completely equipped pilot plant at Danville, Penn., for conducting experiments and test runs in manufacturing cement, lime, gypsum, lightweight aggregate, phosphate, crushed stone, shale, feldspar, dolomite, oyster shells, slag, asbestos, vermiculite, pumice and other allied products. Fred O. Steady, president, announced that studies and analyses ranging from single tests to long-range research will be made available to all companies, large and small, on a basis of actual costs, which will be kept as low as possible. Versatility of the pilot plant is illustrated by portland cement tests which include crushing of raw materials, preliminary grinding, pro-

portioning, blending, raw grinding, clinkering and finish grinding. Florian Schwarzkopf, chemical engineer, is in charge of the operation and equipping of the research laboratory.

Stearns Mfg. Co., Inc., Adrian, Mich., has announced the following appointments: James H. Duffield, Pacific southwestern sales representative in California south of San Francisco Bay, Nevada and Utah; Norman K. Trada, who has represented the company in the Pacific Northwest for the past five years, will also cover northern California, Oregon, Washington, Idaho, western Montana and the Canadian Province of British Columbia; Ralph B. Cushman, Jr., southern sales representative in eastern Texas, Oklahoma, Arkansas and Louisiana; and John J. Collins, sales representative in Wisconsin, eastern Iowa, northern Illinois and northwestern Indiana, succeeding James J. Collins, Sr., who has been transferred to the eastern region along with Robert E. Travis. Mr. Travis' territory consists of western Pennsylvania, western New York, and the Canadian Provinces of Ontario and Quebec. Mr. Cinnins, Sr., will cover eastern Pennsylvania, New Jersey, Long Island, New York, Delaware and Maryland.

Babcock & Wilcox Co., New York, N.Y., has announced the election of S. T. Mackenzie as a vice-president in charge of the sales department of the boiler division. He was formerly sales manager of the department and succeeds W. T. McCullough, Jr., who has retired. Robert K. Allen has been named superintendent of product development at the Alliance, Ohio, research center, succeeding the late G. A. Watts.

Worthington Corp., Harrison, N. J., has promoted E. Weston Hammond from assistant district manager to district manager of the Los Angeles office. He succeeds J. G. Murphy who has been appointed special representative.

R. G. LeTourneau, Inc., Longview, Texas, announces that the firm is re-entering the earth-moving industry in 1958 after a five-year absence. Mr. LeTourneau, president, stated that

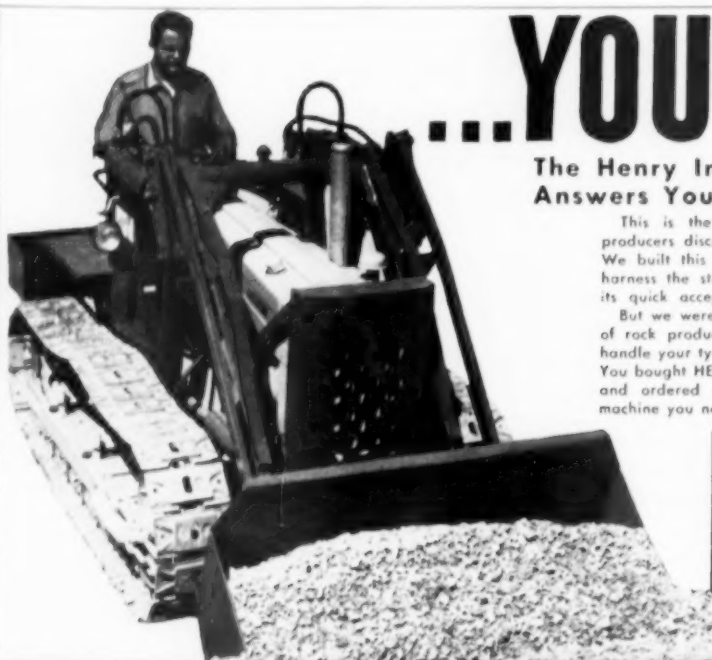


the machines will be driven by "electric wheels," and powered by diesel-electric dynamos similar in principle to those found on modern diesel locomotives. Louis A. Flora, advertising manager, announced the new equipment will be marketed under a new trade mark—"Ar-Gee"—to represent Mr. LeTourneau's initials and to honor his 34 years of achievement in the heavy equipment field.

Borg-Warner Corp., Chicago, Ill., has announced the election of Henry M. Haase, vice-president in charge of engineering and research, as president and chief executive officer of the York division, York, Penn. He will continue as vice-president of Borg-Warner but will not direct the research and engineering activities. Stewart E. Lauer, who has been president of the York division for 16 years, has been named chairman of the board, succeeding Roy C. Ingersoll, who is also board chairman of Borg-Warner Corp.

The Hays Corp., Michigan City, Ind., has announced the appointment of Karl Ziegler as manager of sales promotion and advertising. He was formerly in the sales engineering department.

(Continued on page 212)



## ...YOU KNEW IT BEFORE WE DID!

### The Henry Industrial Tractor Shovel TS-40F Answers Your Demands for a Power Loader

This is the machine that you rock, sand and gravel producers discovered for yourselves. We knew it was good. We built this rugged, more powerful loader specifically to harness the strength of the small crawler tractor . . . and its quick acceptance by industrial users proved its value.

But we were slow to see how completely it met the needs of rock producers for a tractor-mounted loader that could handle your type of brute wear jobs. You made the discovery. You bought HENRY TS 40F Shovels—wrote in praising them—and ordered more. You're right—it's just the time-saving machine you need!

- Powerful lift cylinders 3 1/2" in diameter
- 1 1/2" thick, solid steel lift arms
- Automatic, parallel-circuit control valves
- Lifting capacity 3,000 lbs.
- Breakaway 5,000 lbs.

Many other exclusive power features. See your Henry dealer or write today for free pictures and details.

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"HYDRAULIC ALL-PURPOSE EARTH MOVERS"  
**MANUFACTURING COMPANY, INC.**  
1700 NORTH CLAY ST. TOPEKA, KANSAS

"You can do it  
BETTER with a HENRY!"



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# LIMESTONE

**100,000,000 Tons plus**

**Over 97.5% Calcium Carbonate\***

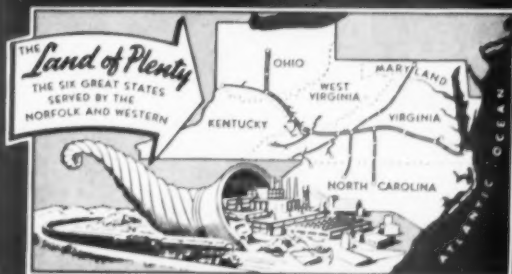
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**Adjacent to dependable  
N&W Rail Service**

For full plant site information related to this vast deposit, plus details about many other Land of Plenty sites near excellent deposits of high calcium and dolomitic limestone, *WRITE, WIRE OR CALL —*

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Norfolk and Western Railway  
Roanoke, Virginia

\*According to Analysis by Pittsburgh  
Testing Laboratories.



**Norfolk and Western  
RAILWAY**

## MANUFACTURERS NEWS

(Continued from page 210)

**Raybestos-Manhattan, Inc.**, Passaic, N.J., has appointed Charles P. McHugh as director of research and product design of the Manhattan rubber division. He succeeds William L. White who becomes technical consultant and continues to be active in sales and technical personnel training at Passaic.

**Nordberg Mfg. Co.**, Milwaukee, Wis., announces that John W. Crandall has been appointed district manager for the mining, crushing and process machinery division in Minnesota, North and South Dakota, and northern sections of Michigan and Wisconsin, with headquarters in Duluth, Minn. He was formerly district manager in the north central territory.

**Ther Power Tool Co.**, has announced transfer of its executive offices from Aurora, Ill., to the Prudential Building in downtown Chicago. All executive officers in management and sales will be located in the new offices.

**Kaiser Aluminum & Chemical Corp.**, Oakland, Calif., has announced purchase of the wire and cable business of United States Rubber Co., which includes the insulated wire and cable plant at Bristol, R.I., and its wire and cable inventories.

**Babcock & Wilcox Co.**, New York, N.Y., has announced the appointment of Paul H. Carlson as advertising manager for the tubular products division, Beaver Falls, Penn. Claude L. Huey, formerly sales engineer in Atlanta, has been named manager of the Atlanta district to succeed Paul R. Yopp who has retired after 31 years of service.

**J. I. Case Co.**, Racine, Wis., announces that the merger of American Tractor Corp. and J. I. Case Co. has been completed and that Marc C. Rojzman, former president of American Tractor, has been elected executive vice-president and general manager of J. I. Case. Mentor Kraus and Edward Elliott have been elected to the Case board of directors.

**Fruehauf Trailer Co.**, Detroit, Mich., announces the appointment of J. W. Trauernicht as director of industrial relations. He was formerly industrial relations director for Baldwin-Lima-Hamilton Corp. and Taylor-Wharton Co.

**Pioneer Engineering Works, Inc.**, Minneapolis, Minn., has appointed the following district representatives: Frank J. McGie in Iowa, Kansas and Missouri, eastern and central Nebraska and southern Illinois; and Vern Sievers in Montana, Lemhi county in Idaho and also in the two Canadian provinces of Alberta and Saskatchewan.

**H. K. Porter Co., Inc.**, New York, N.Y., has named Emmett H. Mann as vice-president and general manager of the Leschen wire rope division. He formerly held a similar position with the alloy metal wire division.

**Illinois Gear & Machine Co.**, Chicago, Ill., has announced the sale of all outstanding stock to Hubbard & Co., Pittsburgh, Penn. and Chicago, Ill. V. P. Reilly, president and founder of Illinois Gear, stated there will be no changes in management or policies of the company. An additional new plant is being added to its South Works to accommodate new machinery estimated to cost \$2 million.

**Eaton Mfg. Co.**, Kenosha, Wis., announces that Raymond R. Dirksen, sales engineer, has been promoted to assistant sales manager of the Dynamatic division.

**Meekum Engineering, Inc.**, Chicago, Ill., announces the appointment of Robert Nestor as district sales engineer in the northwest and north-central states, with headquarters in Minneapolis, Minn. William S. Gorham, Jr., has been named sales engineer in the Chicago area.

**Atlas Powder Co.**, Wilmington, Del., plans construction of a \$3 million technical center adjacent to general offices near Wilmington, Del. Following completion, which is scheduled for the end of this year, technical studies and product development activities now being carried on at the central research laboratory at Atlas Point, Del., will be transferred to the new building, along with personnel of the research and product development departments.

**Dorr-Oliver, Inc.**, Stamford, Conn., has announced plans for expansion and re-allocation of its United States production facilities and a further expansion of Dorr-Oliver-Long Ltd. plant at Orillia, Ontario, Canada, also for conversion of the Oakland, Calif., plant to a semi-production type facility where pumps, centrifugals, Dorr-Clones and D-Sanders will be manufactured.

**Hercules Galion Products, Inc.**, Cleveland, Ohio, has announced the appointment of D. J. Redmond as director of sales. He formerly served as assistant to O. C. Henkel, senior vice-president.

**Cummins Engine Co., Inc.**, Columbus, Ind., has established a plant in Shotts, Lanarkshire, Scotland, known as Cummins Engine Co., Ltd., for the manufacture of diesel engines. D. J. Cummins, director and vice-president of engineering, will direct operations of the new plant.

(Continued on page 215)

for better washing... dust control... concrete curing

# SPRAY NOZZLES

from Spraying Systems Co.

- complete choice of types and capacities to fit your job
- greater efficiency with minimum volume of water

Proper distribution and impact for washing... or proper atomization for dust control and concrete curing without unnecessary wetting... these are just some of the advantages of having a complete choice of spray nozzle types and sizes to fit your job. For complete information write for Catalog 24.

**SPRAYING SYSTEMS CO.**  
3285 RANDOLPH STREET  
BELLWOOD, ILLINOIS





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Rising costs of production and shrinkage of profit margin emphasize the continued need for economy at every possible point. You can save fuel and improve kiln operation by providing your Burner with a continuous record of oxygen, carbon dioxide, and combustibles in the flue gas. A continuous record of oxygen permits complete control of the air supply; combustibles analysis indicates oxygen demand under all conditions; the carbon dioxide record reflects the state of the calcining process. Diligent use of the Cambridge Gas Analyzer results in lower fuel consumption, more uniform product and dollars saved!



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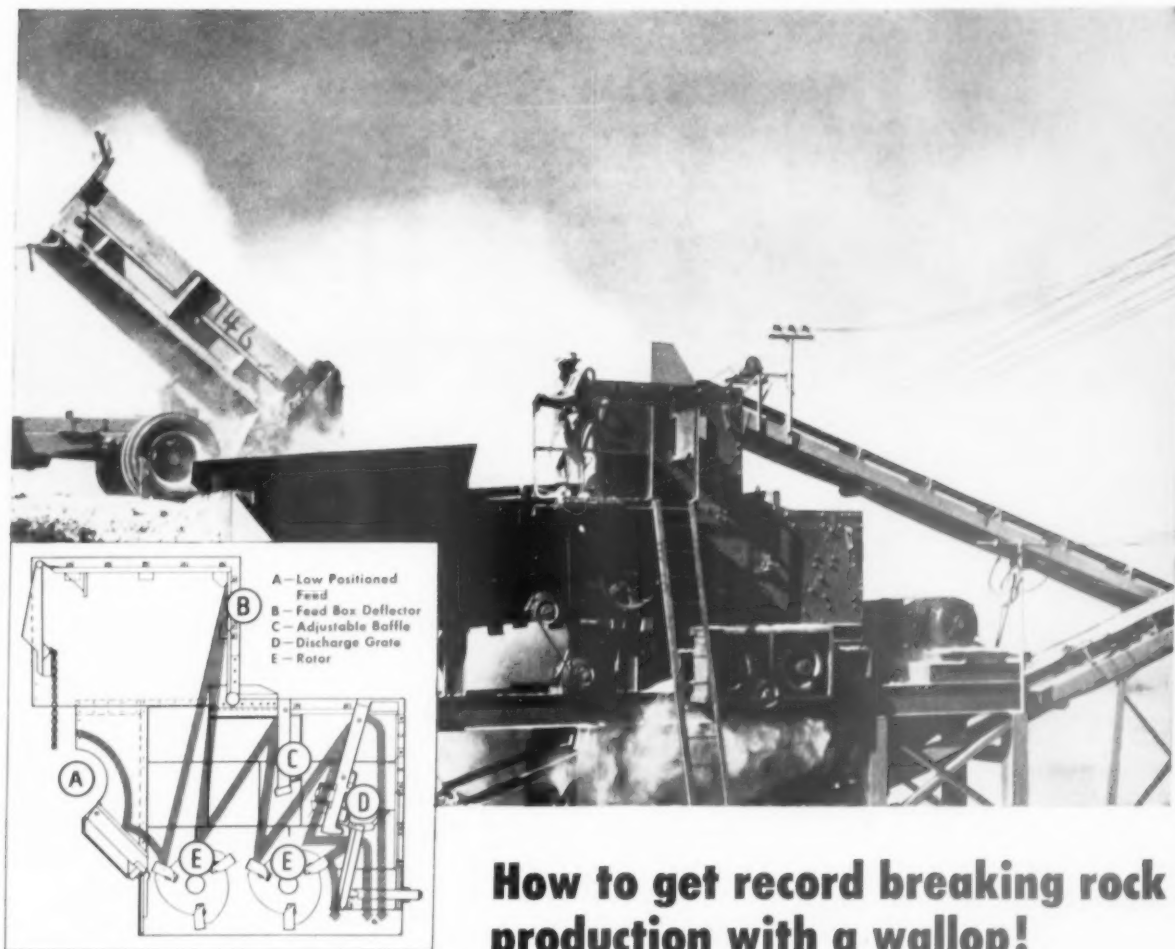
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## CAMBRIDGE GAS ANALYZERS

PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

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## How to get record breaking rock production with a wallop!

When you're reducing non-abrasive stone or similar material and you want tremendous output of cubical particles, the new PIONEER multi-stage, triple action CUBER SENIOR is the unit to get.

Here's a unit designed for portable or stationary installations, and for primary or secondary reduction of soft stone. This outstanding impact breaker will produce a full range of cement and bituminous concrete aggregates with full gradation control and make a profitable margin of aglime simultaneously.

### 350 tons per hour

And talk about output to cost ratio! This CUBER SENIOR has it! For example, you can expect to get up to 350 tons per hour of 3" minus material and up to 150 tons per hour of 1" minus material. And it will produce a range of sizes from 1/4" to 3". Best of all, output for dollar invested is high.

The high reduction ratio of the CUBER SENIOR is developed by its two rotors, each equipped with massive hammers, turning at 550 to 850 rpm

in the direction of flow.

### Takes 34" x 46" rock

Free falling rock up to 34" x 46" receives a smashing head-on impact from the first rotor which breaks it up along natural cleavage lines. Exploded rock shoots upward to the rear of the feed box and then ricochets back to the first rotor where it is again reduced. The second impact hurls the material upward toward an adjustable baffle. This baffle may be moved either up or down to deflect the desired proportion of over-size back into the second rotor where it is still further reduced. This cycle is repeated once more as indicated in the diagram above and then the finished aggregate is expelled from the reduction chamber.

### Construction features

Features which contribute to outstanding performance and long life include: steel plate, single welded base assembly with cast manganese steel liner plates... steel, box-type

main housing... reduction chamber lined with wear-fighting manganese steel... rotor cores made of heavy steel plate... shafts of heavy alloy steel, pressed into rotor and mounted in heavy duty, self-aligning bearings.

For more information about the new PIONEER CUBER SENIOR, write Pioneer Engineering Works, Inc., Minneapolis 13, Minnesota (a subsidiary of Poor & Co., Chicago) or see your nearest PIONEER Distributor.

# Pioneer

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Pioneer Engineering Works, Inc., 1515 Central Ave. Minneapolis 13, Minn.  
Please send information on equipment checked.  
Subsidiary of Poor & Company • Chicago

<input type="checkbox"/> CUBER	<input type="checkbox"/> DRG FEEDERS	<input type="checkbox"/> VIBRATING SCREENS
<input type="checkbox"/> JAW CRUSHERS	<input type="checkbox"/> ROCK PLANTS	<input type="checkbox"/> CONVEYORS
<input type="checkbox"/> ROLL CRUSHERS	<input type="checkbox"/> GRAVEL PLANTS	<input type="checkbox"/> BITUMINOUS PLANTS
<input type="checkbox"/> APRON FEEDERS	<input type="checkbox"/> WASHING PLANTS	<input type="checkbox"/> BITUMINOUS PAVERS

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## MODERN BUSINESS



## AND MODERN SCHOOLS



## NEED EACH OTHER MORE THAN EVER!

**T**his has been a great year! America is building and replacing and thus moving faster than ever before.

Only one thing. Will the labor market keep pace?

That's where schools are important. If your company isn't helping community groups to get modern schools, it's not apt to get the skilled people it needs. Self interest, civic spirit, or both, you should make schools your business, too.



Want to find out how to help in *your* community?  
Get specific information by writing:  
Better Schools, 9 East 40th Street, New York, N. Y.

## MANUFACTURERS NEWS

(Continued from page 212)

**Four Wheel Drive Auto Co.**, Clintonville, Wis., has announced the following promotions: Victor M. Anderson, from sales administrator to assistant to the vice-president of sales; Fred A. Brown, from district sales manager in the midwestern area to assistant sales manager in charge of the eastern division; and Robert J. Peterson, from district sales manager in the Northwest to assistant sales manager in charge of the western division. Lloyd L. Pernot, transport sales manager since 1951, has been appointed director of sales engineering.

**Boston Woven Hose & Rubber Co.**, Cambridge, Mass., has established a new warehouse in Denver, Colo., to service the mountain states area, with J. H. Steffensen as district manager.

**Blaw-Knox Co.**, Pittsburgh, Penn., announces that Robert P. McKenrick, vice-president and general manager of the construction equipment division, Mattoon, Ill., was recently elected executive vice-president of the Construction Industry Manufacturers Association.

**Link-Belt Co.**, Chicago, Ill., announces acquisition of the Detroit Power Screwdriver Co., Detroit, Mich., which will be operated as a subsidiary by its present management headed by Roy W. Bailey, president.

**Allis-Chalmers Mfg. Co.**, Milwaukee, Wis., has appointed L. C. Daniels as general manager of the Buda division, tractor group, and Owen J. Higgins as general manager of the Harvey, Ill., works where Buda material handling equipment and diesel, gasoline engines and generator sets are manufactured. He suc-

ceeds R. K. Mangan, president and general manager of the Buda division, who has retired.

**The Wellman Bronze & Aluminum Co.**, Cleveland, Ohio, has announced the appointment of S. C. Lawson as sales representative in Chicago, Wisconsin and Minnesota, with headquarters in Milwaukee, Wis.

**American Smelting & Refining Co.**, New York, N.Y., has appointed Jackson How as director of public relations. He has been a vice-president of John Mather Lupton Co., Inc., New York advertising and public relations agency.

**Chase Bag Co.**, Chicago, Ill., announces that J. H. Counce, southern regional sales director and manager of the New Orleans branch, will devote all of his time to direction of sales in the southern region, and D. H. Denholm, formerly chief industrial engineer, has been appointed manager of the New Orleans plant. Charles S. Wicks, who has been on the staff of the industrial engineering department in St. Louis, assumes the position of senior industrial engineer. C. E. McCabe, sales representative in the Bakersfield, Calif., area, will handle sales in northern Illinois.

**Air Reduction Sales Co.**, New York, N.Y., has announced acquisition of the assets and business of Jackson Products, Inc., Detroit, Mich., manufacturers of welding electrode holders, welding helmets, safety goggles, etc.

**The J. B. Ebraam & Sons Mfg. Co.**, Enterprise, Kan., designers and manufacturers of gypsum processing equipment, gypsum and rock crushers, pulleys, castings, etc., has announced the appointment of Robert K. Kanecy as sales representative in charge of the newly established office in Riverside, Calif. He has been with the firm since 1945.

**Illinois Gear & Machine Co.**, Chicago, Ill., has announced the election of T. S. Pacer, E. H. Smiley and G. P. Sullivan as vice-presidents. Each has served the company for more than 20 years.

**Victor Equipment Co.**, alloy rod and metal division, San Francisco, Calif., has opened a new plant at Norwalk, Calif., for the manufacture of hardfacing rods and other products.

**Vitro Corp. of America**, New York, N.Y., has acquired Berkshire Chemicals, Inc., New York, N.Y., which will become a wholly-owned subsidiary of the company. Malcolm McAllister continues as president of the division.

**Marion Power Shovel Co.**, Marion, Ohio, has been acquired by The Universal Corp., which is continuing operation of the Marion Power Shovel Co. and the Dagood Co. as divisions of Universal.

**John A. Roebling's Sons Corp.**, announces that John E. Heald, who has represented the construction materials division in the southeast area for the past two years, has been transferred to the midwest territory. John H. Bass, Jr., formerly with the N-C Products Corp., manufacturers of prestressed concrete, replaces Mr. Heald in the Atlanta office.

**Pettibone Mulliken Corp.**, Chicago, Ill., has acquired the Mercury Mfg. Co., Chicago, manufacturers of tow tractors, electric lift trucks and trailers. E. J. Seifert, president of Pettibone Mulliken, has been named chairman of the board of Mercury Mfg. Co.

**Mexico Refractories Co.**, Mexico, Mo., has opened division offices in Edmonton, Alberta and Winnipeg, Manitoba, Canada, under the direction of W. A. Sullivan, Jr.

(Continued on page 216)

## FOR A Superior AGRICULTURAL LIMESTONE PRODUCT

### BRADLEY HERCULES MILLS

From rough to finish . . .  
in one low-cost operation

Constant progress in design and manufacture over the past 50 years has made Bradley Hercules Mills the standard pulverizer where a superior agricultural limestone product is desired. Automatic electrical feed control eliminates manual operation. Rugged, dustless construction, maximum accessibility keep maintenance costs at an absolute minimum. In sizes to meet the requirements of most any plant at moderate cost.

For complete information, write for Catalog No. 61



# Bradley PULVERIZER CO.

LONDON ALLENTOWN, PENNA. BOSTON

ROCK PRODUCTS, April, 1957

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# PEABODY AIR HEATER FURNACES

*the  
right answer  
to your air  
heater problems...*

## FEATURES:

**BURNERS**—only ONE per furnace

**FUELS**—oil or gas with equally good results

**CAPACITY**—up to 300 million B.T.U./hr.

**PRESSURE**—one to 10 atmospheres

**FLEXIBILITY**—a wide range of  
outlet temperatures

**PROVEN PERFORMANCE**

—hundreds of units installed in process plants

Peabody Air Heaters go on the line smoothly, operate at full capacity on demand and always deliver "SPECIFICATION PLUS" performance.

## PEABODY ENGINEERING CORPORATION

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7-062

ROCK PRODUCTS, April, 1957

## MANUFACTURERS NEWS

(Continued from preceding page)

Barber-Greene Co., Aurora, Ill., has a new plant under construction near DeKalb, Ill., for production of ditchers, loaders, conveyors, ear unloaders, bituminous mixing and paving equipment, and other road construction and



materials handling equipment. The new plant, with Frank J. Merrill, formerly assistant to president H. A. Barber, as general manager, is expected to be in operation late in 1957. Announcement has also been made of expansion of the Barber-Greene Canada, Ltd. plant in the Don Mills area of Toronto, Canada.

American Hoist & Derrick Co., St. Paul, Minn., has announced the appointment of John W. McEvoy as vice-president and general manager of the Lebus Mfg. Co., Longview, Texas, a wholly owned subsidiary of the company. He was formerly superintendent of structural works in the St. Paul plant.

Blaw-Knox Co., Pittsburgh, Penn., announces that F. R. Putnam has been named assistant to the general manager of the Blaw-Knox equipment division. A graduate of the U. S. Naval Academy, Mr. Putnam was recently retired as a Rear Admiral after 22 years of active service.

"Quick-Way" Truck Shovel Co., Denver, Colo., has elected Daniel S. Helfron as vice-president. Well-known in the construction equipment field, Mr. Helfron has been director of sales since 1944.

Hewitt-Robins, Inc., Stamford, Conn., announces that F. L. Griffith has been elected vice-president in addition to his duties as general sales manager of the industrial products divisions. He has been with the firm since 1949. F. W. Blanchard, who has been serving as assistant to the executive vice-president, Austin Goodyear, has been named vice-president of manufacturing and engineering for these divisions.

Byers Machine, Inc., Ravenna, Ohio, a wholly owned subsidiary of The Thew Shovel Co., Lorain, Ohio, has announced the election of W. W. Blauvelt as vice-president in addition to his duties as general manager.

Fruehauf Trailer Co., Memphis, Tenn., announces the retirement of N. A. Carter, Sr., vice-president, who will continue to serve as a consultant. Mr. Carter founded the Carter Mfg. Co. in 1924 and when the firm became a part of Fruehauf Trailer Co. in 1947, Mr. Carter was named manager. He has been vice-president for the last five years.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has elected Boyd S. Oberlink, group vice-president, as a member of the board of directors. He succeeds Rex Reeder, who has retired. Mr. Oberlink has been with the firm since 1934 and served as vice-president and general manager of the construction machinery division prior to his appointment as group vice-president in January, 1956. Announcement has also been made of the opening of a branch office by the industries group at Allentown, Penn., to serve Berks, Lehigh and Northampton counties, under management of Ralph L. Haney.

END



The Universal 293QS on a road construction site west of Tremonton, Utah, 1955.

## The Universal 293QS TwinDual Gravel King has "Increased our pay load by 33⅓%, lowered operating costs 10c per ton"

Says Jed R. Abbott of Germer, Abbott & Waldron Construction Company, Tremonton, Utah

Abbott's company saved \$20,000 on its first large order for aggregate produced by the Universal 293QS.

"After turning out 200,000 tons of



### More than a gravel producer

The 293QS is the most versatile machine on the market—two plants in one! Inquire how you can convert it quickly from gravel to crushed stone production and back again.

material for U.S. Highway 91 last year," said Abbott, "this is the most economical plant we've ever operated. Our payload is a third more and our costs were ten cents a ton less than with other crushing equipment.

"On the Highway 91 job, it took three D-8 Cat dozers and a scraper to feed the 293QS. The plant we were using before required only one D-8. That'll give you an idea of the difference in capacity."

You'll have a story to be proud of, too, when you work with the Universal 293QS. Producers are enthusiastic about the ability of this plant to make up for lost time. As Jed Abbott puts it, "The severity of Utah weather could mean the loss of much production, but with the Universal 293QS we have the capacity to fill larger orders, fill them faster, charge less and make more money in the long run."

Nearly everyone, like Germer, Abbott and Waldron, goes through seasonal or other costly shut-downs. Costly, that is, unless like Germer, Abbott & Waldron,



### Volume production through improved design

Finished material on final belt. Exclusive Universal TwinDual roll crusher permits up to 100% wider discharge opening of the extra-large primary jaw crusher. Jaw efficiency increased by pre-screening pit-run material before entering crusher.

you've discovered crushing equipment like the Universal 293QS — designed to recapture time lost — at a profit!

Write for complete facts on the Universal 293QS Gravel King now.



## UNIVERSAL ENGINEERING CORPORATION

617 C Avenue, N.W., Cedar Rapids, Iowa

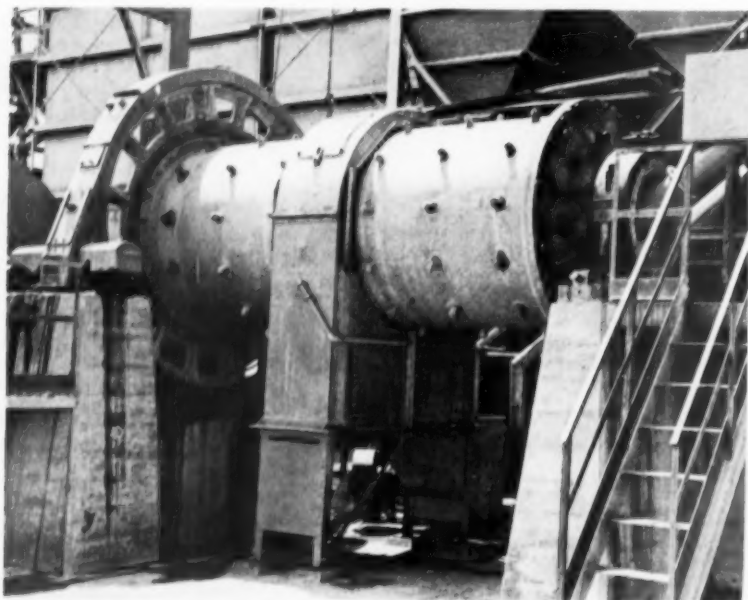
Subsidiary of Pettibone Mulliken Corporation, 4700 W. Division Street, Chicago 51, Illinois

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# see what Marcy can do for YOU!

to help beat the competitive sand and gravel situation

You get all of these advantages by manufacturing **specification** sands with Marcy Center Peripheral Discharge Grinding Mills...



**Produce desired sand on location,** save hauling costs.

**Manufacture sand from waste gravel**

**Better Sand Product.** Grinding in a Marcy CPD Mill will produce for you a uniformly cubical shaped product with same characteristics of shape and strength throughout the range of sizes produced. This results in:

- stronger concrete
- better finish on concrete
- better slump characteristics
- use of less cement

**Operating Advantages.** Compared with crushing, experience has proved you will get these additional advantages by grinding with Marcy CPD mills:

**Low Cost.** low maintenance, less steel consumption and less power per ton result in an overall cost generally less than 25c per ton, exclusive of amortization.

**Flexibility.** by varying rate of feed, pulp dilution and discharge port area it is possible to change gradation of finished product to meet different specifications.

**Cleaner Operation**

**Wet or Dry Grinding**

Capacities from 2 to 200 dry tons per hour.

NO EXTRA CHARGE FOR **MARCY** EXPERIENCE



THE MINE AND INDUSTRIAL SUPPLY CO.

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SALES AGENTS AND LICENSED MANUFACTURERS THROUGHOUT THE WORLD



# CONCRETE PRODUCTS

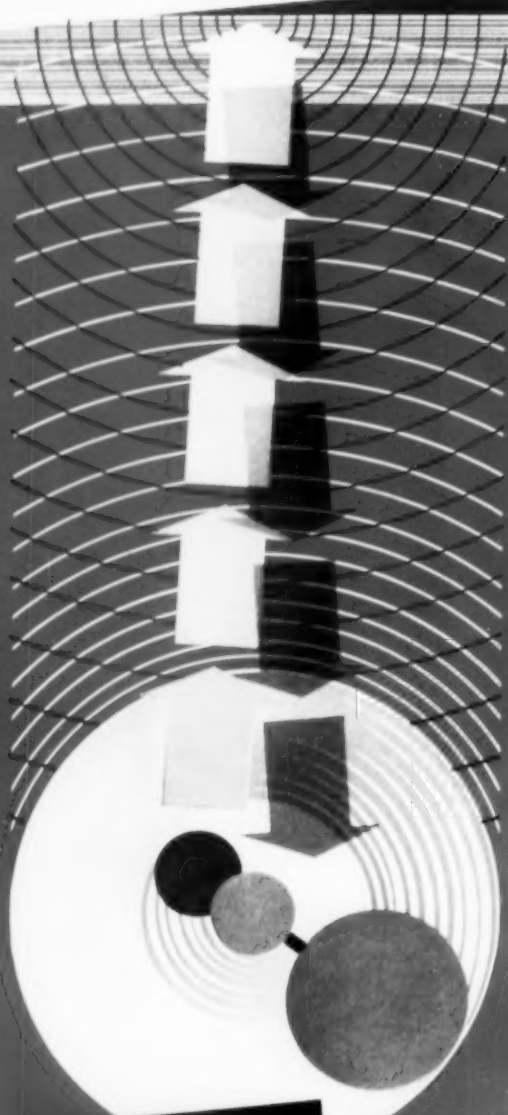
A SECTION OF ROCK PRODUCTS

CONCRETE UNITS · READY-MIXED CONCRETE



Transit-mix trucks shown at work on the huge Mackinac Bridge

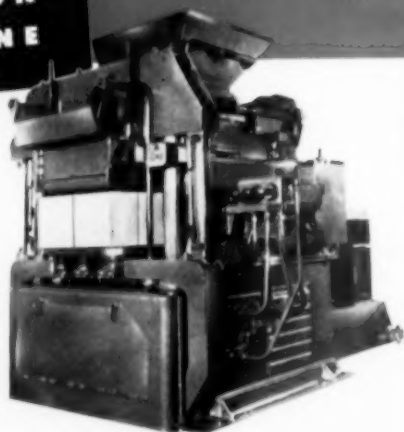
**MORE MOVEMENT  
IN THE MOLD BOX**



**LESS VIBRATION  
IN THE MACHINE**

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# INDUSTRY NEWS

## Cover Picture

FEATURED ON THE COVER of this month's issue of CONCRETE PRODUCTS is a picture of construction as it is progressing on the Mackinac Bridge in northern Michigan. These two transit-mix trucks are responsible for mixing and transporting more than 12 million lb. of concrete for paving the mile-long roadway on the south deck of the span. The truck at the left in the photograph is emptying its load into a pumping machine that forces the concrete through a long pipeline to paving crews.

## Speed Tank Output

TWO WARREN, PENN., inventors, Elwood Fry and Henry Fasenmyer, have developed a casting machine for manufacture of concrete septic tanks which is said to quadruple production. Both are officials of Warren Concrete Products Co.

Under the new system, low-slump concrete is vibrated and tamped in the mold, creating a dense cast from which the mold can soon be stripped. Production is said to be six tanks per hour, or an acceleration in normal casting rate of about 400 percent.

## Adds Prestressing Unit

MIDWEST CONCRETE INDUSTRIES, Des Moines, Iowa, is enlarging its plant to provide for production of prestressed concrete products, including framing, roof decks and bridge girders. Initial production runs are scheduled for April 30, 1957, according to Gregor J. Gentleman, president.

## Installs Autoclave

SMITH CONCRETE PRODUCTS CO., Kinston, N.C., has initiated a \$250,000 expansion program with installation of a 10- x 108 ft. autoclave for high-pressure steam curing of block.

## To Triple Production

THE CITIZENS COAL AND CONCRETE CO., Parkersburg, W. Va., has launched an expansion of its block production facilities. A 40- x 70 ft. main building will be erected at the rear of the present plant. Joining the larger structure will be a 40- x 30-ft. extension occupied by machine room, boiler room and offices. Another building, 40- x 65-ft., will house five curing rooms.

A Gene Olsen "Trustee" automatic block machine to be installed has a capacity of 6000 standard units per day. The new equipment and space will triple the company's output, according to a statement by Claude Crawford, president.

## Texas Group Spring Meeting

TEXAS CONCRETE MASONRY ASSOCIATION will hold its annual spring membership meeting April 11 and 12, 1957, at Terrace Motor Hotel, Austin, Texas. Nolan Browne, Sr., Nolan Browne Co., Dallas, is succeeding to the presidency held by Ervin Hahn, Atlas Building Products Co., El Paso. Harold M. Dodds, Jr., Texarkana Concrete Products Co., Inc., Texarkana, will assume the duties of secretary-treasurer.

Directors-elect are William F. Smith, Black-Brolier Co., Houston, and Floyd L. Carmichael, Sr., Western Builders Supply Co., Ft. Worth.

## Concrete Firms Merge

JAYHAWK CONCRETE MATERIAL CO., Bonner Springs, Kan., has merged with Olathe Ready Mixed Cement Co., Olathe, Kan. Organized September, 1955, in Bonner Springs, Jayhawk will be known as a division of the Olathe organization. Arthur Martin is president of the parent firm, which has operated in Olathe since 1949.

## New Prestressed Plant

VIRGINIA PRESTRESSED CONCRETE CORP., Christianburg, Va., will erect a plant at Roanoke, Va., for the manufacture of heavy prestressed concrete structural members for use in bridge construction, according to an announcement by William H. Carder, president.

## Acquires Landsite

MATERIAL SERVICE CORP., Chicago, Ill., announced acquisition of a 10-acre landsite at Ninth and Cline Avenues, Gary, Ind. Leased on a long-term basis from the New York Central Railroad, the property will be the location of the company's 31st yard serving the Greater Chicago area. The \$250,000 yard and Redi-Mix operation will service Gary, Hammond, East Chicago and the Indiana Harbor industrial area.

*(Continued on page 282)*

ILLINOIS BRICK CO., Chicago, Ill., has purchased Oswalt Co., concrete block manufacturing firm. The acquisition will increase Illinois Brick's block production one-third and provide a nine-acre site for future expansion, says John Goodridge, president.

CUSHMAN TRANSIT MIX CORP., Wattertown, N.Y., has been incorporated to deal in concrete, bituminous products and similar materials. Incorporating stockholders are Joseph A. Hawes, R. Victor Conlin and Edna M. Cushman.

OKMULGEE READY-MIX CONCRETE CO., Okmulgee, Okla., has been granted a charter, with authorized capital stock of \$100,000. Incorporators are R. F. Kay, William H. Pine and Sam K. Viersen Jr.

GONZALES CEMENT WORKS, Gonzales, Texas, will move its headquarters to San Antonio when its new concrete sewer pipe plant there is completed, according to an announcement by A. O. Neuman, president.

D. & M. CONCRETE SPECIALTIES, INC., Roanoke, Va., has been organized by W. Linwood Draper, president. Capitalization of \$50,000 was authorized.

J. & W. CONCRETE PRODUCTS CO., Inc., Wauwatosa, Wis., has been formed to manufacture concrete septic tanks and other concrete products by Jack L. Wynn, Wauwatosa.

UNIVERSAL CONCRETE PIPE CO., Martinsville, W. Va., has announced a \$100,000 expansion program which includes installation of a Besser block machine.

LACROSSE CONCRETE CO., LaCrosse, Wis., will add pipe manufacturing equipment to its ready-mixed concrete plant as well as additional transit-mix machinery.

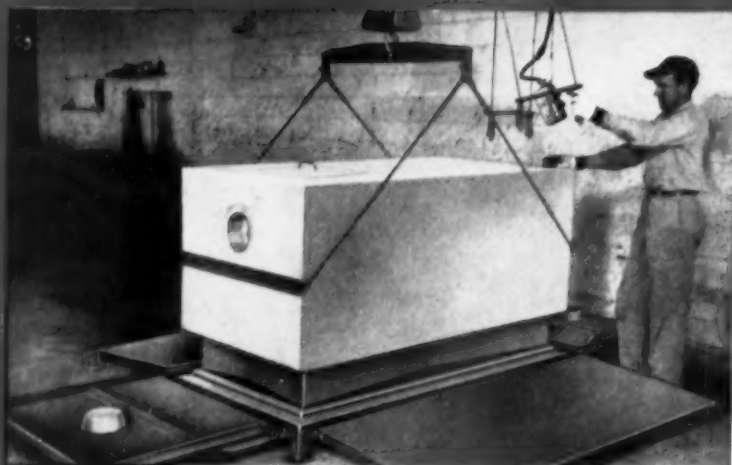
WORLEY READY MIX CONCRETE, INC., Rocky Mount, Va., has been capitalized at \$50,000. D. W. Worley is president.

CONCRETE PRECASTING CORP., Madison, Wis., has been formed by James M. Young, naming Donald B. Willink as registered agent.

MARTIN CONCRETE PRODUCTS CO., Martin, Tenn., has begun production of a ready-mixed concrete plant.

R. B. CONCRETE PRODUCTS CO., Cleveland, Ohio, has been organized by I. S. Haiman.

# Concrete Septic Tanks Increase Your Profits



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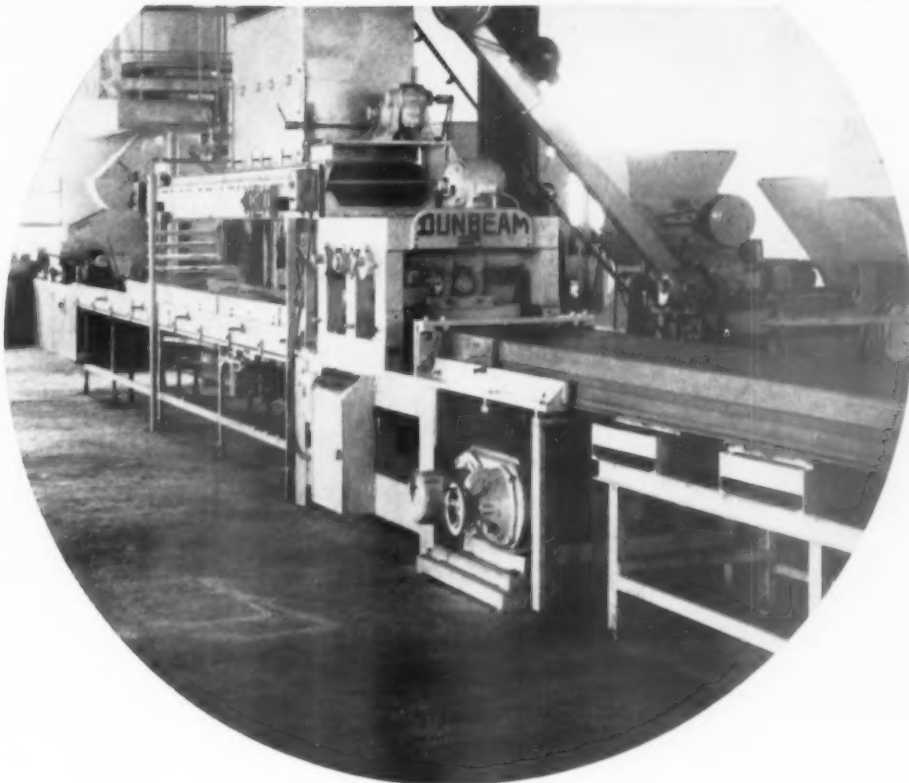
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up to 24" wide by 8" high, and in any practical  
length . . . for any type of public, industrial and  
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Broad markets are waiting in many localities. Write  
or wire for literature and information on leasing  
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**W. E. DUNN MFG. CO.    504 W. 24th Street    HOLLAND, MICH.**

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CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

223



## Extra Large Pretensioned Concrete Girders Produced At Speed Of One A Day!

Tufwire strands for four girders were pretensioned. Forms were set, reinforcing steel placed

### Mammoth Spans Pretensioned With Union Tufwire Strand Adds Proof of Prestressed Concrete's Ever-Widening Adaptability

**Ordered for the construction** of a new triple super phosphate storage warehouse, each of these giant girders is 101 ft. 6 in. long, with a height of 12 ft. at the center, tapering to 4 ft. at the ends. They were cast by Prestressed Concrete, Inc., Lakeland, Fla., in a double bed, 422 ft. long. In the prestressing, a total of 48-7/16 in. Union Tufwire Stress-Relieved Strands were stretched in the bed in two rows—four girders to each row.

**In this project,** two of the many advantages which the Prestressed Concrete Industry has to offer, have been convincingly demonstrated. Both are of vital importance to the construction industry.

1st. Design and fabrication limits of Prestressed Concrete are far from being reached.

**Rolling to the job:** Giant 70-ton girder on the way to the site of chemical storage warehouse being built at Brewster, Fla.



2nd. The speed with which Prestressed Concrete sections are produced eliminates construction delays by by-passing materials in short supply, or on extended backlog delivery.

**Architects and engineers** are finding prestressed applications virtually unlimited. Prestressed components serve as foundations, floors, columns, beams, slabs, walls and roofs. For highway bridges, prestressed concrete is fast becoming standard design in many areas. For example, the state of Florida and its Turnpike Authority have standardized on prestressed concrete bridges. Girders or deck sections can often be mass-produced quickly and erected in less time than is required to install false work.

**Up she goes!** One girder has been placed in the structure, another is being positioned, and a third is on the ground ready for hoisting.





and the concrete cast progressively from one end of the casting bed to the other.

## Union **TUFWIRE** Strand Used 100% In These Girders

As long time specialists in high carbon wire, the Union Wire Rope organization stepped sure-footedly into pioneering the technological development of stress relieved, high tensile wire and strand for prestressing concrete. Just as sure-footedly it has expanded research and production facilities to keep well ahead of the demands of the 300% yearly growth of the prestressed concrete industry.

**We're geared** to the needs of this amazing prestressed concrete industry—and geared for its future growth.

**Today we're supplying** Tufwire Stress-Relieved Wire and Strand to projects ranging from the largest in history's biggest highway building program . . . right on down to poles and farmers' fence posts. The orders

don't come too big or too small. You can be sure of prompt delivery from our strategic Mid-America location.

**Have a problem?** Whether you're already an on-site contractor or a permanent casting-bed operator—or are exploring the potential of prestressed concrete in your area—get in touch with our engineering department and research laboratories.

**Would you like** to have a reprint of a recent Tufwire advertisement which has been called "a primer of the prestressed concrete industry"? It distills the whole big story of prestressed advantages into 10 minutes of thought-provoking reading. It is a summary of fundamental facts supplied by a panel of prestressed fabricators and consultants who pioneered in the industry and have grown with it. Write for your copy today!



Small buildings, too, share the advantages and economies of prestressed concrete construction. This eye appealing shelter house in a park will minimize vandalism and be remarkably easy on maintenance costs. Compare the speed and facility of erection when structural members are mass-produced and delivered complete instead of laboriously being cast on the site.

### UNION Tufwire Is Protected Against Rust and Corrosion

All shipments of Tufwire Strand are safeguarded against corrosive effects of dampness, salt air and damaging fumes. Another big Tufwire "plus"!

union

# Tufwire

**Stress-Relieved Wire & Strand**

union Wire Rope corp.

*Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand.*

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Kansas City 26, Missouri

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# Better Building...

## AT LESS COST!

**Prestressed, Rigid-Frame Structure,  
Costing \$1.72 per Sq. Ft., Finished  
Months Ahead of Estimated Schedule**

● Well worth looking into, in these days of still-rising costs, is the economy potential of prestressed concrete construction. This 100-by-64-ft. office building, two floors and full basement, 18,000 sq. ft. of floor space, quality concrete throughout, was completed months ahead of estimated schedule. Utmost fire-safety and structural soundness, plus earlier occupancy and quicker return on owner's investment. In-place cost of precast prestressed structure, \$1.72 per sq. ft.

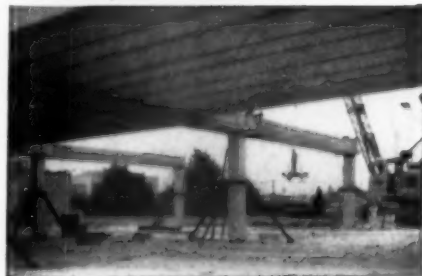
Precast reinforced columns, 32 ft. on centers, have steel plates welded to girder plate, creating a rigid frame. Hollow girders, precast in halves and assembled into 32-ft.-long members, were post-tensioned with three cables before erection. Three additional continuous cables were added after erection. Inside of girders was filled with grout after tensioning.

Each 6-ft.-wide double-T floor section, supported on girders 33 ft. 4 in. on centers, is stressed with sixteen wire strands, pre-tensioned and bonded. 'Incor' 24-Hour Cement was used throughout in precasting, for the twin advantage of profitable speed with highest quality.

Required 4500 psi strength was attained after 17 hours steam curing—3-day strengths averaged 6000 psi. 'Incor' was also used in precast wall panels.

Another convincing example of always-dependable 'Incor'\* performance—soundest possible reason for insisting on America's FIRST high early strength portland cement for time saving and quality assurance.

\*Reg. U.S. Pat. Off.



☆

U. S. FIDELITY AND GUARANTY CO.  
Office Building—Richmond, Va.

Architect: J. HENLEY WALKER, JR.

Structural Engineer: WM. J. BLANTON

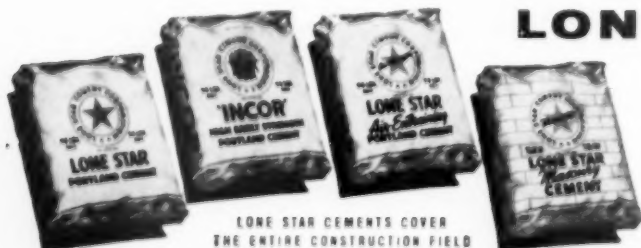
General Contractor:  
DANIELS CONSTRUCTION COMPANY

Members Prestressed by:  
CONCRETE STRUCTURES, INCORPORATED

Precast Panels by:  
ECONOMY CAST STONE COMPANY

—all of Richmond, Va.

☆



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THE ENTIRE CONSTRUCTION FIELD

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## LONE STAR CEMENT CORPORATION

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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS. 18 MODERN MILLS, 38,200,000 BARRELS ANNUAL CAPACITY



Left to right: Ralph Reimer, Cleveland Builders Supply Co., George Hoffman, Nailable Cinder Block Corp. and William Carter, Sr., Fischer Lime and Cement Co. with the bronze trophies presented to their companies at the recent N.C.M.A. meeting in St. Louis

## Contest winners discuss highlights of their accident prevention programs

# What makes a safe block plant?

**F**ORTY-SIX MEMBER COMPANIES of the National Concrete Masonry Association received recognition for outstanding safety records at the organization's recent annual convention in St. Louis. Plants of each of the 46 companies operated throughout the safety contest year ending July 31, 1956, without a single lost-time accident.

Participants in the contest were judged on the basis of over-all safety, total block production and total man hours worked. Bronze trophies were awarded for top performance in each of three classes of competition: Class A for plants with an annual output in excess of 5 million 8-in. units; Class B for plants with an annual output of less than 5 million but more than 1.5 million units; and Class C for plants producing less than 1.5 million units annually. The winners were the Hugo plant of Cleveland Builders Supply Co., Cleveland, the Nailable Cinder Block Corp., New York, and the Fischer Lime & Cement Co., Memphis. Representatives of these firms received safety trophies from Henry Quaritius, chairman of the Association's accident prevention committee.

In making the presentations Mr. Quaritius pointed out that the block industry has an accident rate six times greater than the national average for all industry, and that it is consequently paying six

times as much as it should for compensation insurance. "It makes no more sense," Mr. Quaritius said, "to tolerate unsafe practices than it would to tolerate the production of sub-standard block." He expressed the view that the problem can be solved only when top management becomes fully aroused and determined to do something about it.

Each of the 46 companies that received recognition at the St. Louis convention operated block plants throughout the contest year without a lost-time accident. Seven of these were observing their third consecutive year without a lost-time injury, and 14 had clean slates for two consecutive years. All the finalists in the competition received certificates of achievement from the Association.

The 101 plants which participated in N.C.M.A.'s 1956 safety competition reported 205 lost-time injuries for a total of 4.7 million man hours. The showing of 44 lost-time injuries per million man hours compares with an average for all industries of 6.96 in 1956, according to figures compiled by the National Safety Council.

In reporting the results of its safety competition, N.C.M.A. threw some light on management practices which make it possible for busy plants to

*Please turn to page 262*



Main plant of Katterjohn Concrete Products, Inc., Paducah, Ky.

# Diversification and are the keys to this

**W**IDELY DIVERSIFIED PRODUCTS and flexibility of manufacturing operations to meet changing markets are important factors in the steady growth of Katterjohn Concrete Products, Inc. The company's main office is in Paducah, Ky. where it operates two plants, with another in Owensboro, Ky. and a third in North Little Rock, Ark.

In addition to both lightweight and heavy concrete masonry units in modular sizes, Katterjohn products include concrete brick in a variety of colors, split block, slump block, single core fence block, precast concrete sills and lintels, splash

block and garden furniture. And for the farm market, specialties such as stock watering troughs and water tanks and tapered concrete barn pillars. Structural members include precast concrete joist in lengths up to 30 ft. and filler block for floor and roof systems. Other Katterjohn specialties include large concrete septic tanks, burial vaults and mine pillars and 4-in. concrete drain tile.

The most promising of the Katterjohn developments are concrete highway bridge members. These bridge members were designed by the Ken-



Owensboro, Ky. plant of Katterjohn Concrete Products, Inc.



Aerial view of North Little Rock plant and yards

# flexibility company's growth

By HUBERT C. PERSONS

tucky State Highway Department, made in the Katterjohn plant at Owensboro and are now stocked in the plant ready to be erected at any site. The company also makes right-of-way markers and guard rail posts for the highway department. And in addition to the many items of its own manufacture, the Katterjohn company stocks and sells portland cement and masonry cement, masonry paint and a line of concrete accessories including wall reinforcing.

The Katterjohn block plant at Tenth and Estelle Streets in Paducah, built in 1951, is managed by

H. C. Karricker. The plant is notably efficient in the handling of raw materials as well as in the manufacturing and curing of block. About 40 percent of the block made in this plant are lightweight using two kinds of lightweight aggregate. Denilite is an expanded clay aggregate made in Memphis, Tenn., and Red Rock is produced in Birmingham, Ala. Sand and No. 11 limestone are used in the heavy concrete masonry units.

Aggregates are delivered in hopper bottom railroad cars on a company-owned Illinois Central spur and dumped into outdoor receiving bins over a re-



Precast highway bridge being erected in Boone County, Ky.

## Diversification & flexibility

*Continued . . .*

claiming tunnel. This 140 ft. long tunnel is lined with 12 in. thick reinforced concrete and is 12 ft. deep and 12 ft. wide.

The tunnel contains two 24-in. Goodyear conveyor belts beneath the receiving hoppers. The two belts discharge to a third belt moving at a right angle which carries the material to a bucket conveyor which takes it to the 84 ft. high bins over the batching tower at a rate of 50 tph. These 50-ton bins, three for aggregate and one for cement, were made by the Allison Company of Phoenix, Ariz.

A Besser Vibrapac block machine is served by a 50-cu. ft. Besser mixer. The plant has 10 curing kilns each with capacity for 22 block racks holding 72 standard 8 x 8 x 16-in. block. Manually operated scales made by the Hardy Scale Company, Los Angeles, Calif., control mix proportions.

Filled block racks are taken from the machine floor to the curing kilns by two 6,000-lb. Clark Model Y-60 fork lift trucks. The low pressure steam curing cycle covers five hours in the kiln at 160 deg. F. maximum temperature and overnight soaking in the kilns from the time the steam is turned off until the morning shift starts. In the summer the plant works one 10-hr. shift starting at 7 a.m. In the winter the 8-hour shift starts at 8 a.m.

Steam for the curing kilns as well as heat and

hot water are supplied by a 100-hp. Kewanee boiler. Condensation from the kilns is collected in a sump and recirculated.

From the curing kilns the block are taken by fork lift trucks to the cubing area which is just outside the main plant building. Cubing is done outside except in bad weather. This work is facilitated by two air-operating cubing hoists both made in the plant shop. Plant average is approximately 5,500 standard block per day.

The Paducah plant also makes concrete brick in modular sizes in a variety of colors. These brick are cast 32 at a time in a special mold on a Besser block machine. The concrete block are sold under the trade name "Katter-Blox," while the concrete brick are sold under the trade name "Katter-Brix."

About 1½ acres of the plant site are paved with concrete to facilitate access to the stockpiles for about 250,000 block of various sizes are kept in the yards ready for delivery.

Deliveries of block or brick are made by a Ford tandem Model T-700 equipped with a Jiffy unloader. More than 700,000 of the "Katter-Brix" in a brick red shade were used in the construction of the West Kentucky Baptist Hospital in Paducah.

The precast plant of the Katterjohn Company in Paducah is located at Eighth and Jones streets and is managed by George Collins. Here a number of the larger precast concrete specialties are made

Side view of block machine in North Little Rock plant showing skip hoist charging the machine



Steam generating room showing 50-hp. gas-fired boiler at North Little Rock plant

including 500- and 700-gal. septic tanks, grease traps, farm watering troughs and tanks, burial vaults and garden furniture. This plant also casts concrete guard rail and right-of-way posts, survey markers, sills and lintels and 4-in. concrete drain tile.

An unusual item being made in this plant is a doughnut-shaped unit 36 in. in diameter and 12 in. thick, rabbeted at the center on one side and tongued on the other. Nested one on top of the other, these are made to replace pillars of any height in a fluorspar mine near Cave in Rock, Ill. They are made from customer's drawings. Each unit weighs 1,018 lb. and is cast with steel lifting hooks.

The reinforced concrete guard rail posts are 6 x 6 x 72-in. long. The right-of-way posts are 6 x 6 x 42-in. and tapered at one end. Both of these items are cast in aluminum gang molds. Concrete for these products and for the tanks, troughs and burial vaults is prepared by two Koehring two-bag mixers. A  $\frac{1}{4}$ -cu. yd. Gar-Bro bucket on a  $1\frac{1}{2}$ -ton monorail conveyor is used to fill the various forms.

The burial vaults are cast in steel forms supplied by the Berg vault company of St. Louis, owners of the patents, and are sold under the trade name Berg Bronzoleum, descriptive of the exterior finish of the vaults. A time capsule—a feature of Paducah's centennial celebration July 29 to Aug. 1, 1956—was buried in one of these vaults donated for the purpose by George Katterjohn, president and principal owner of the Katterjohn company.



Mr. Katterjohn has long been active in civic affairs in Paducah and was a member of the centennial committee.

There are six low pressure steam curing kilns. Steam is supplied by a 30-hp. Kewanee boiler. Forms are moved to and from the curing kilns by the monorail conveyor.

The 4-in. drain tile is made in an Appley pipe machine. Several thousand feet of drain tile as well as approximately 1,000 guard rail and right-of-way posts are maintained in stockpiles. The plant also keeps 50 watering tanks and 75 burial vaults ready for delivery.

The Owensboro plant of Katterjohn Concrete Products, Inc., managed by Douglas Williams, is remarkable for cleanliness and efficiency. Although this operation, started in 1947, is in many respects a model concrete block plant, its present production is widely diversified. Outstanding among the Owensboro products are the precast reinforced concrete highway bridges made in 3 ft. wide sections in either 20 ft. or 30 ft. lengths. These bridges are manufactured under Kentucky State Highway Department specifications from their

Please turn to page 266



A group of builders, realtors, architects, designers and personnel of the Arkhola Sand and Gravel Co. made the trip down to Phoenix, Ariz. by plane

## How you can promote concrete

This group lead the way with an inspection trip to Phoenix, Ariz. Here is what they saw . . .

**T**HERE HAS BEEN A REVOLUTION in concrete masonry in the past few years. Block has burst forth from the basement into radical new shapes, weights, sizes and colors, and has thus become perhaps the most flexible of the major building materials. But most of its producers have given this revolutionary development merely standard gray publicity. Their mild efforts have not been sufficient to interest many people in exploring block's expanded potentialities.

The Arkhola Sand and Gravel Co. of Fort Smith, Arkansas, the state's largest manufacturer of autoclave-cured block, has dared to give its products the brilliant and exciting promotion they deserve. These efforts have been more than rewarding, not only to the firm, but to the industry as a whole. Its colorful scheme to acquaint the customers with concrete masonry's new faces may inspire others to copy its methods and share in its success.

Employing see-it-now tactics, the company in-

vited a group of outstanding Arkansas and Oklahoma builders, architects, designers, and realtors to join its personnel in a flying inspection trip of Phoenix, Arizona. In this enlightened city the application of block is as unlimited as the imagination of the users, and concrete masonry is the preferred material for both economic and aesthetic reasons. Instrumental in producing the favorable climate for block is Superlite Builders Supply Co., the world's largest manufacturer of concrete masonry units and its most energetic promoter.

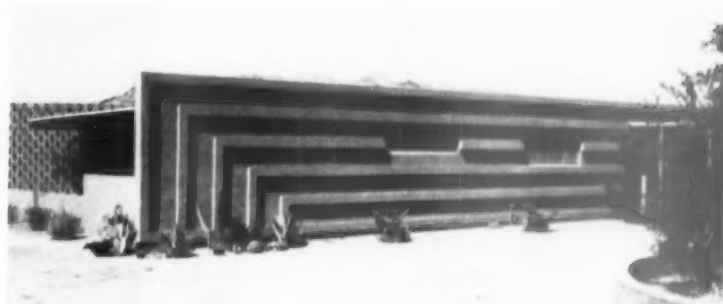
The twenty-nine fortunate men took off from Fort Smith Municipal Airport one day last November, laden with cameras to record what they saw. The three-day junket included round trip air transportation, lodging and meals in Phoenix and guide service to the most interesting construction and job sites in the city.

Their guides in Phoenix were Gilbert E. Olson



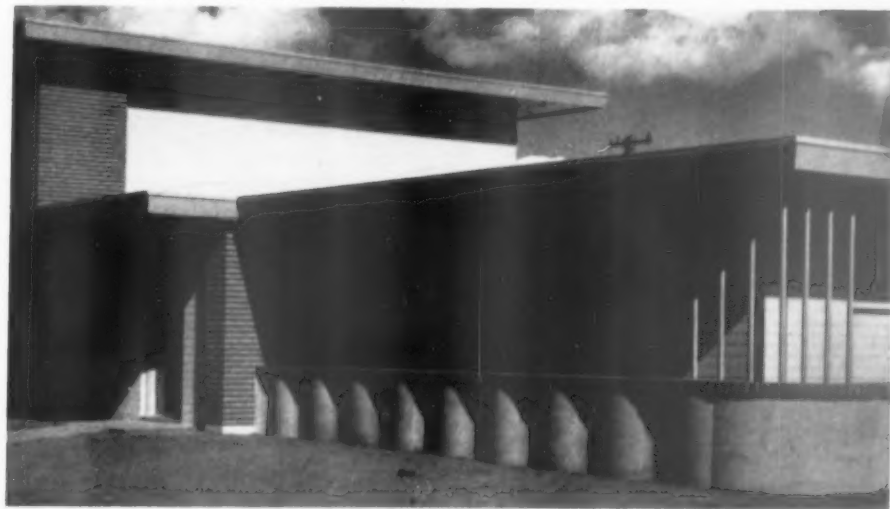
**Block**, set in an alternating pattern, created this very striking three-dimensional effect

## block



**This modernistic design** was achieved by setting out every third course and thus also creating a pattern of light and shadow. In the background is a wall of concrete masonry with the block laid at an angle

**This apartment building** features unusual curved block set in a serpentine pattern, accented by colored walls in running bond and neat brick panels





**Stacked bond walls** combine well with the vast glass windows in Mr. Thomas's home. The mortar is deeply scored vertically to form strong lines. The unusual flower box around the house is in running bond.

## Promoting concrete block

*Continued . . .*

and Paul M. Thomas, top officials of Superlite. These gentlemen and members of their staff gave the visitors a deluxe construction tour of the vicinity, showing off block at its Sunday best. They saw churches, both modern and traditional, that employed every variety of block with taste and distinction; schools that embodied the most progressive trends in education and architecture; and the business-like and beautiful commercial and professional buildings that distinguish and grace Phoenix.

Most interesting to the tourists were the houses they saw, which ranged in price from \$8,500 to \$125,000, and in type from project to custom-built. One of the highlights of the tour was a visit to the extraordinary housing developments of John Long, the largest and most ingenious home builder in the area. Using block inside and out, he has achieved a tremendous variety in design and construction techniques with effectiveness and economy. Many of the low-priced homes came with swimming pools in their back yards, and none of them had the mass-production single-plan look that typifies so many undistinguished housing projects. The visitors were very impressed with what they saw and came away with a better under-



**Morning glories** were painted on this concrete masonry wall to give a little added touch. Colored glazed block on the lower part of the wall provides a contrast in texture.

standing of what could be done with block. They were equally delighted with the other side of the picture when they saw the magnificent custom-built homes of Mr. Olson and Mr. Thomas.

This tour took a mountain of advance planning but it was well worth it. The Arkhola Co.'s clever attempt to turn its clients' pleasure into business was enormously successful. Those who made the trip became enthusiastic salesmen of the material, influencing all with whom they came into contact at home with first-hand information on the virtues of concrete masonry, and they themselves lost no time putting what they had learned into practice. Arkhola's achievement has provoked a great deal of comment as a new approach to selling block, and what it has done is certainly worthy of imitation by other far-sighted firms.

**END**



**Kenneth R. Lauer**, University of Notre Dame, co-awardee of Wason Medal for "Noteworthy Research" and **Roy R. Clark**, consulting engineer, Portland, Oregon, ACI Construction Practice awardee



**Raymond C. Reese**, left, consulting engineer, Toledo, Ohio, received Lindau Award. **Albert T. Goldbeck**, right, consultant to National Crushed Stone Association, Washington, D.C., received Turner Medal



Co-awardees of Wason Medal for "Most Meritorious Paper" are **William A. Cordon**, left, Utah State Agricultural College; and **Lewis H. Tut-hill**, right, California State Department of Water Resources, Sacramento

## Annual convention

# A.C.I. spotlights prestressed concrete



Retiring ACI President **Frank Kerekes**, left, and newly elected President, **Walter H. Price**

**P**RESTRESSED CONCRETE came in for the lion's share of attention at the 53rd annual convention of the American Concrete Institute, held in Dallas, Texas, February 25 to 28. It dominated an entire session of the four-day meeting while consideration was given to the first progress report of a joint A.C.I.-A.S.C.E. committee formed to develop a "Recommended Practice for Prestressed Concrete;" it came up again during the session on construction in a paper describing a prestressed concrete hangar; and it was in evidence during the annual open session of A.C.I. Committee 115 on Research.

Along with their deliberations on technical problems of concrete, members of the Institute found time to elect a new group of officers to take the helm during the forthcoming year. Elected to a one-year term as president was **Walter H. Price**, head of the engineering laboratories, U. S. Bureau of Reclamation, Denver. Mr. Price, a well-known authority on problems related to the construction of large concrete dams and irrigation works, has been an A.C.I. member since 1937, and had just completed a two-year term as vice-president.

Elected at the Dallas meeting to a two-year term as vice-president of A.C.I. was **Phil M. Ferguson**, chairman, Department of Civil Engineering, University of Texas. **Douglas McHenry**, director of development for the Portland Cement Association, has another year to serve on the vice-presidential term to which he was elected at the 1956 convention.

None who attended the Dallas convention will question that its major accomplishment was a thorough airing of the proposed "Recommended Practice for Prestressed Concrete." Under the chairmanship of **Thor Germundsson**, the joint committee has taken a long first step toward the development of a badly needed set of standards for the guidance of engineers engaged in the design of prestressed concrete members and structures.

As required by the completely democratic procedures which govern all A.C.I. activities, each paragraph of the proposed standard was thoroughly scrutinized at the open committee session in Dallas. Individual members of the committee discussed in detail the areas of disagreement involved in the sections of the report for which they were



New ACI vice-president, **Phil M. Ferguson**, left, and Senior vice-president, **Douglas McHenry**

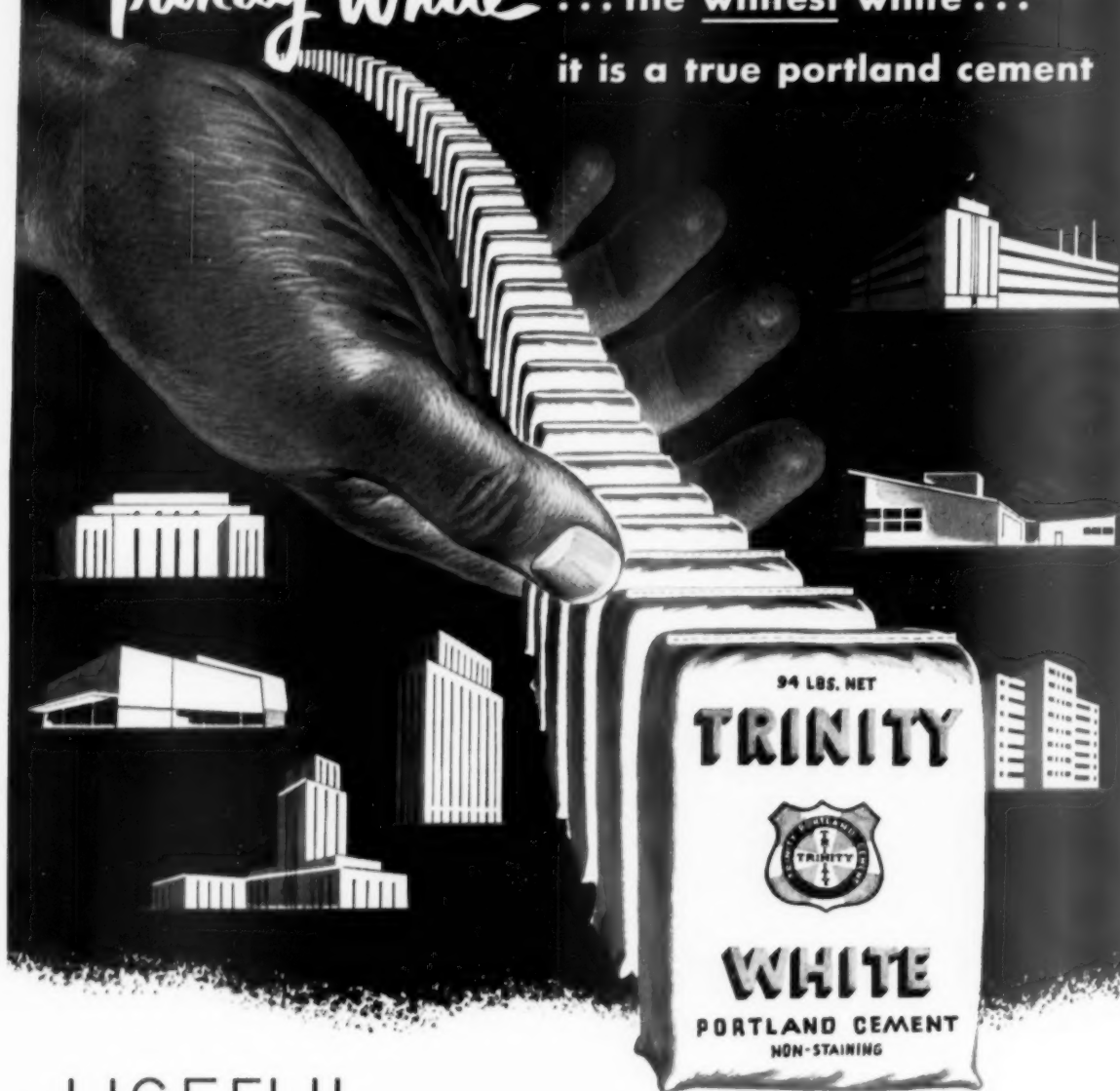
primarily responsible, and all present at the session were given an opportunity to comment.

The report is limited in scope to structural members involving linear prestressing; that is, it specifically omits circularly prestressed members, such as tanks or pipes. The recommendations relate mainly to flexural members, such as beams, girders and slabs. Such structural forms as col-

(Continued on page 277)

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in almost every type of building, both inside and outside.

As architectural concrete units or as stucco or cement paint, it emphasizes architectural perspective and detail. It has a high light-reflection which gives beauty and special utility to many interiors.

☛ Trinity White's extra whiteness gives truer colors where pigments are added.

Widely used in terrazzo for its contrast-y white and better color effects in either simple or ornate designs. Meets all Federal and ASTM specifications. Ask for TRINITY White.



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Ohio contracting firm, S. E. Johnson Co., reports:

**"We unload the largest hopper cars in 45 minutes"**

"Our Barber-Greene unloader and conveyor easily handle 800 tons a day with just intermittent operation. So far, we have moved over 85,000 tons of material and have had no maintenance expense to speak of."

This statement isn't a manufacturer's specification; it is a factual, unvarnished, report typical of the many comments on outstanding performance of Barber-Greene car-unloading equipment.

Wherever it's used, the combination of the 363 Portable Con-

veyor and the 358 Car Unloader provides a sure way to cut unloading costs and to release cranes and other, more expensive equipment for more efficient operation on other jobs. Whatever these Barber-Greene handle—coal, sand, gravel or other bulk materials—they do the job virtually automatically as a one-man operation.

Both conveyor and unloader are mounted on pneumatic tires for easy maneuvering about the yard . . . for fast between-job towing at truck speeds.



B-G Unloader operates above or below the rails. Portable conveyor can be equipped with screens, power hoist and other accessory equipment. Capacity ranges to 150 t.p.h. Powered by gas or electricity.

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CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

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237



**Philip Paolella**  
New President



**Carroll Strohm, Jr.**  
Secretary-Treasurer



**Cedric Willson**  
New Director



**E. A. Peterson**  
Vice-President



**E. W. Dienhart**  
Executive Secretary



**Earl W. Peterson**  
Retiring President

#### CONVENTION BRIEFS

**Attendance:** Approximately 5,000

**Exhibits:** About 130 manufacturers of equipment and materials required 25,000 sq. ft. of floor space in St. Louis' Kiel Auditorium. This new all-time record for displays was 40 percent more than the previous high set in Cleveland two years ago.

**Staff:** E. W. Dienhart, executive secretary  
Evelyn Bouet, assistant secretary  
R. E. Copeland, director of engineering  
W. P. Markert, director of promotion  
Theodore Leba, Jr., manager, Washington office  
E. R. Mangotich, design engineer  
H. T. Toennies, development engineer  
Jack Grenz, promotion assistant  
W. J. Blaha, publicity assistant  
William Loewer, assistant engineer  
R. D. Dikkers, assistant engineer

## N.C.M.A. holds annual convention in St. Louis

**B**LOCK MANUFACTURERS from all over the United States and possessions and from Canada reaffirmed their faith in the future of their industry by turning out in unprecedented numbers to attend and participate in the 37th annual convention of the National Concrete Masonry Association. Held at St. Louis in the last four days of February, the occasion also marked the 10th showing of the Concrete Industries Exposition. Well over a hundred of the major manufacturers of equipment, tools and materials for the industry helped to make the exposition one of the most colorful and dramatic in the history of block making.

Outgoing president Earl W. Peterson set the keynote for the St. Louis convention by bluntly calling attention to the Association's urgent need for stronger support from the industry. Describing N.C.M.A.'s plans for the future as "bold and imaginative," Mr. Peterson expressed the view that membership growth will be the No. 1 problem in the years just ahead. He believes that the only thing that can slow

down the block industry's progress is an unwillingness on the part of many producers to measure up to their responsibilities.

Mr. Peterson noted that the Association's present membership represents about one block producer for each 350,000 population, and he suggested that a practical goal might be a representation of one producer for each 175,000 population. There is an urgent need for fresh ideas, Mr. Peterson said, if we are to prove equal to the job ahead, and vast reservoirs of fresh ideas can be tapped most quickly by expanding membership in N.C.M.A.

**The membership-growth theme** received another substantial nudge from W. P. Markert, director of promotion. Echoing Mr. Peterson's view that the association must have more support from block producers, Mr. Markert pointed out that just one major competitor, the lumber industry, spends about \$200,000 annually for promotion and market development. This compares with an annual expenditure

of about \$33,000 for national promotion by the block industry.

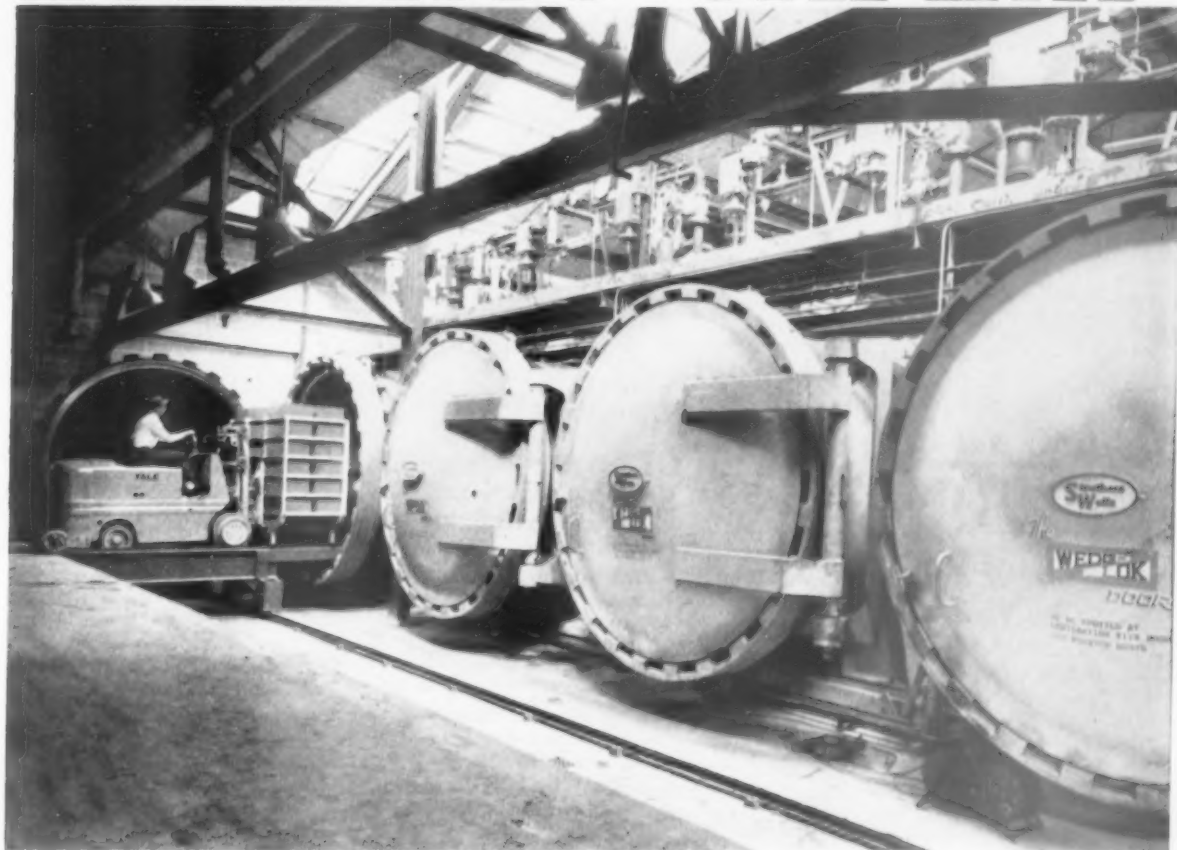
Mr. Markert suggested that the block industry's promotional efforts are lagging well behind minimum requirements for an era of intense competition. He asserted that manufacturers of clay brick and of prefabricated housing are making concerted efforts to increase their share of markets in which the block industry has a major stake.

Philip Paolella, executive vice-president of the Plasticrete Corp., Hamden, Conn., and a director of N.C.M.A. for the past 10 years, became president of the organization at the close of the St. Louis meeting. He is a past chairman of N.C.M.A. committees on promotion and local, state and regional associations, and thus well qualified to inject new vigor into the organization's effort to win new members.

Mr. Paolella has been intimately involved with the block industry since he was 10 years old, having worked in his father's plant after school at

(Continued on page 240)

# LOADING CHAMP



## FAST LOADING OF KILNS BY YALE TRUCK SAVES TIME, STEPS UP PRODUCTION

Here's a smooth, efficient handling operation! Kilns are loaded in a minimum of time by a Yale Gas Truck that moves right into the kilns to deposit large racks of bricks. To further speed up this loading operation the flanged front wheels of the truck run on a track, thus assuring greater ease when spotting loads.

Handling operations are smooth wherever you find Yale Gas Trucks in action because they incorporate premium engineering features as standard—features such

as hydraulic wheel brakes within the wheels for smooth stops, "open-vision" uprights for full forward visibility, shock-resistant steering to reduce operator effort, maximum truck-stability for extra safety under all load conditions. Available in capacities from 2,000 to 10,000 lbs. with fully automatic Yale Torque Transmission, Fluid Coupling or standard transmission. Find out how Yale Gas Trucks can speed *your* handling operations. For full facts, contact your Yale representative or send coupon below.

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Roosevelt Boulevard, Philadelphia 15, Pa.  
Please send me the new, fact-filled, 24-page booklet  
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CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

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A general view of the exposition

## N.C.M.A. MEETING

(Continued from page 248)

that early age. He became associated with Plasticrete on a full-time basis in 1936. Since 1940 the company's output has soared from 1 to 12 million units annually.

**Carbonation shrinkage**, still an uncharted wilderness so far as most block producers are concerned, was the subject of two excellent papers presented at the St. Louis meeting—one by William H. Kuenning, senior development engineer of the Portland Cement Association and the other by Henry Toennies, development engineer for N.C.M.A.

Mr. Kuenning's paper points out that although drying and carbonation both cause block to shrink, the former is accompanied by a loss in weight, while the latter actually causes weight to increase. Laboratory findings indicate that as much as 46 percent of shrinkage in normally cured block may consist of carbonation shrinkage, and attention is now being focussed on methods by means of which this shrinkage can be induced artificially in block plants rather than occur gradually after the block are in service.

The work which has been done so far on the problem demonstrates that artificially carbonated block expand and shrink much less than uncarbonated block under successive cycles of wetting and drying. Natural carbonation appears to result in a progressive shrinkage to which artificially carbon-

ated block are not subject. These observations seem to lend encouragement to the investigator's hope that carbonation may provide an economical solution to the problem of shrinkage cracking.

Mr. Kuenning sounds a warning in regard to the artificial carbonation of autoclave-cured block. Treatment of high-pressure-steam-cured block with 80 percent  $\text{CO}_2$  results in a disturbingly large shrinkage compared to that which occurs when carbonation of the same units is caused by the 0.03 percent  $\text{CO}_2$  present in the normal atmosphere—perhaps as much as 900 millionths of an inch per inch (more than an inch per 100 ft.) compared with 50 to 100 millionths. For this reason the intentional carbonation of autoclave block is not advised.

Mr. Toennies discussed some of the problems involved in carbonation. The most serious one from an economic point of view is the source of  $\text{CO}_2$  gas. The carbonation of a standard block seems to require about one pound of  $\text{CO}_2$  gas at a cost of about five cents. This cost, in addition to the cost of handling and the special equipment which would be needed, would probably price the product out of the market.

Noting that the waste flue gases created in generating steam for curing contain 10 to 18 percent  $\text{CO}_2$ , Mr. Toennies raised the question of whether this waste product might not be used to carbonate block. Tests show that proper steam curing of block requires the combustion of enough fuel to produce one pound of  $\text{CO}_2$  gas—

indicating that this waste product might be used to fully carbonate one block in eight, or to partially carbonate any desired proportion of the total output of a given plant.

This approach is now being tried out in pilot plant operations being conducted for N.C.M.A. by the Research Foundation of the University of Toledo. While these studies are far from complete, there are indications that potential shrinkage can be reduced by as much as 50 percent by means of 9 hr. of flue gas carbonation at 150 deg. F. Compressive strengths of the block are apparently not affected by this treatment; all block, it seems, are apparently not equally receptive to carbonation.

Carbonation shrinkage was also mentioned briefly by R. E. Copeland, N.C.M.A. director of engineering, in his report of association engineering activities during 1956. According to Mr. Copeland, association research on this subject is at the moment designed to explore the economic and technical possibilities of utilizing steam boiler flue gas of 12 to 14 percent carbon dioxide concentration for artificially carbonating previously cured units. It is hoped that such artificial carbonation may prove to be a means of producing block having a high degree of moisture volume stability, as well as freedom from subsequent air carbonation shrinkage.

According to Mr. Copeland, the results of artificial carbonation have to date been largely negative. Treated block have shown no significant alter-

(Continued on page 243)

# CENTRALIZED RADIO DISPATCHING

... WITH RCA 2-WAY RADIO CAN MEAN A 20% EFFICIENCY BOOST IN READY-MIX DELIVERIES!



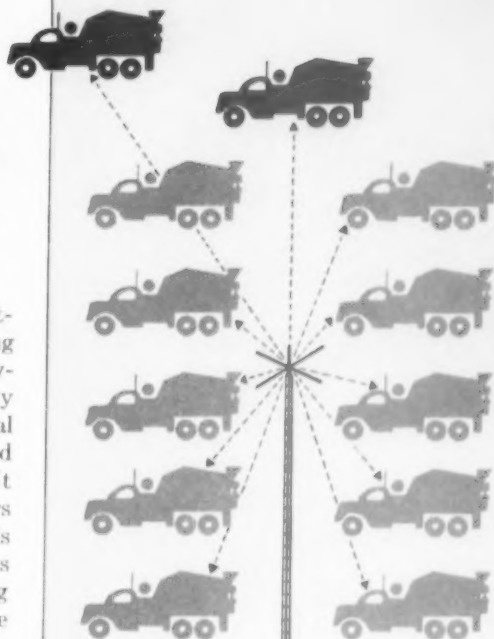
Ready-Mix firms with widely scattered batching plants are solving the problem of coordinating deliveries, with RCA 2-Way Radio. By making all dispatching from a central point it permits trucks to be loaded at a plant nearest the job site. It

makes for faster service to customers, gives dispatchers better control of mixers, reduces operating costs and speeds up help in breakdowns. The usual claim is that 10 trucks radio-equipped are equal to 12 without radio ... boosting deliveries 20%. Plants shut down earlier at night because of close contact with concrete requirements. Drivers like radio because it makes their jobs easier. No wonder so many of the industry's leaders say they "wouldn't own a mixer truck without radio in the cab."

## THEY ALSO SAY "RCA FOR QUALITY"

RCA 2-Way Radio equipment is the answer to highest reliability, built-in reserve power, better adaptability ... because it's designed that way. 6/12 volt convertibility, elliptical loud speaker providing three times more power than ordinary types, rugged construction. RCA designs, manufactures, installs, maintains and services its own mobile radio equipment, provides advanced features that only come from the leader in radio and electronics.

Get the Whole Story—Mail Coupon



10 = 12

Ten radio equipped mixer trucks are equal to 12. Mixer nearest delivery location receives radio orders and proceeds to nearby batching plant for loading—then to job site.



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of AMERICA**

**COMMUNICATIONS PRODUCTS  
CAMDEN, N. J.**

*In Canada:*

**RCA VICTOR Company Limited, Montreal**

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Communications Products  
Dept. R-289, Building 15-1, Camden, N.J.

☐ Please send me latest literature on the use of 2-Way Radio in the Ready-Mix Industry.

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☐ Have RCA Communications Specialist make free RADIO SURVEY of my business.

# How to use BLAW-KNOX Ready-Mix Package to make more profit...

**BLAW-KNOX READY-MIX PACKAGE**  
Hi-Boy TRUKMIXERS • Bins  
• Batchers and Central Mixing Plants •  
Steel Curb, Curb, Gutter and Sidewalk  
Forms • Concrete Buckets •

**AT RIGHT** — A typical job where Evansville Concrete Company supplies ready-mix concrete and a set of Blaw-Knox Steel Street Forms for a customer.

**BELOW** — Newest of the two Blaw-Knox Batching Plants in operation for Evansville Concrete Company. This is a central mixing plant with push-button controls.



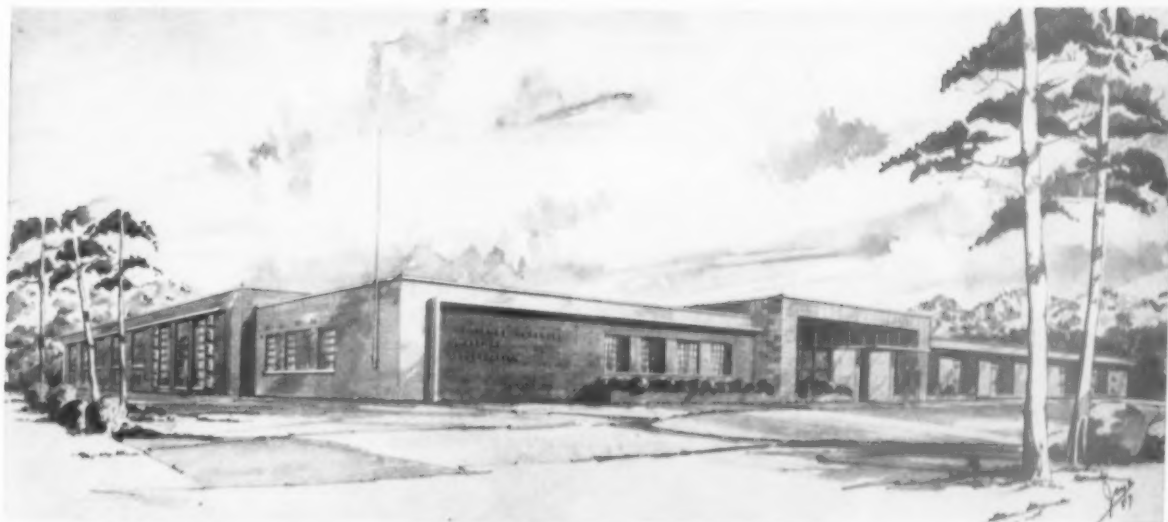
## Evansville Concrete Company has the formula —

In addition to their regular ready-mix service, Evansville Concrete Company owns Blaw-Knox Steel Curb, Curb and Gutter and Sidewalk Forms for use by their customers. This kind of service assures this Evansville ready-mix operator a steady, profitable business. Blaw-Knox Hi-Boy TRUKMIXERS haul ready-mix concrete from two fast, accurate Blaw-Knox Batching Plants the year around. One plant is for dry batching, the second plant, shown above, is a push-button operated Central Mixing Plant.

Blaw-Knox Hi-Boy TRUKMIXERS contribute to this profitable ready-mix operation. Their special design allows them to haul maximum payloads within legal weight limitations so Evansville Concrete Company can get the most concrete hauled in the fewest trips.

For complete information on large or small Ready-Mix operation see the following Blaw-Knox Bulletins: For TRUKMIXERS — No. 2455-R; For Batching Plants — No. 2488; For Steel Street Forms — No. 2259-R. See your local Blaw-Knox Distributor or write to Blaw-Knox.

**BLAW-KNOX COMPANY**  
Construction Equipment Division  
36 Charleston Ave., Mattoon, Illinois



## Proposed New Home for N.C.M.A.

Shown here is an architect's perspective of the proposed office and laboratory building for the National Concrete Masonry Association. Still under consideration by the association's building committee and by its board of directors, the all concrete-masonry structure is being designed by

Architect John D. Jarvis of Chicago. A 4 $\frac{3}{4}$ -acre wooded site has been purchased in West Chicago, some 29 miles west of downtown Chicago. As presently conceived, the building would cover approximately 14,300 sq. ft. of

floor space, including a partial basement. The laboratory wing would contain a machine shop, a room for batching, mixing and molding block, and areas to house structural, chemical and precision testing laboratories.

END

## N.C.M.A. MEETING

(Continued from page 240)

ation in measured physical properties or carbon dioxide content compared to companion untreated block. He expressed the opinion that there is a need for a more effective carbonation process.

The St. Louis meeting marked the first showing of a new institutional film which drew high praise from all who saw it. A joint production by the Portland Cement Association and N.C.M.A., the film charts the progress of the block industry in recent years. Copies will be made available to members of the Association for showing to groups of architects, builders, contractors and other interested groups.

Other major contributions to the program of the St. Louis meeting included papers presented by Theodore Leba, Jr., manager of the Washington office of N.C.M.A.; Robert D. Dikkers, assistant engineer for the association; Elmer A. Peterson, Rock-lite Products, Ventura, Calif.; Richard L. Coleman, Carter-Waters Corp., Kansas City, Mo.; Joseph Sidlovsky, Union Carbide and Carbon Corp.; C. E. Lovewell, Chicago Fly Ash Co.; and Fred H. Daues, Mason Contractors Association of America.

Two panel sessions were also im-

portant factors in the success of the convention. One on high-pressure-steam curing, under the chairmanship of Richard J. Frazier, brought together the following able panel members: Edmund H. Brooke, W. J. Brull, John Buehner, J. C. Fountain, Noel D. Harter, Leonard Jones, S. Victor Paturzo, and Clyde Stewart. An open session on local, state and regional associations, under the chairmanship of Elmer A. Peterson, included talks by C. A. Sirrine, Concrete Products Association of Michigan; Paul Lenchuk, Florida Concrete and Products Association; R. Davidson, National Concrete Products Association (Canada); Byron D. Osterloh, Nebraska Concrete Masonry Association; J. A. Allen, Concrete Masonry Association; Benjamin Wilk, Standard Building Products Co.; and Ervin Hahn, Texas Concrete Masonry Association.

The membership theme also showed up prominently in the address of incoming President Phil Paoletta. "In the very fierce, competitive period ahead of us," Mr. Paoletta said, "individual block producers will be overwhelmed by other building material manufacturers and suppliers, unless we band together to maintain a spot in the construction sun. We must join hands; we must learn to work together

with our competitors at the local level in the sales phase of our business if we are going to mature. We must encourage our national association at the national level to help us with our production problems and to give us the promotion assistance we must have in order to survive."

END

## Virginia Firms Merge

TRANSIT MIXED CONCRETE CORP. and Ready Mixed Concrete Co. Ltd., Staunton, Va., have announced their merger. Officers of the merged organizations are: L. S. Ranhorne, president; J. Aubrey Potter, Jr., vice-president; Harold W. Burns, secretary-treasurer, and David P. Snyder, assistant secretary-treasurer.

•

TAYLOR CONCRETE CO., INC., Richmond, Va., capitalized at \$100,000, has been formed to deal in ready-mixed concrete by Harvey F. Taylor, president.

•

DOUSMAN CONCRETE PRODUCTS INC. has been formed in Waukesha, Wis., by Joseph N. Uelman, Esther Uelman, Lawrence C. Christensen and Judith Christensen.

# NEW MACHINERY

## Submersible Pump



SPEED KING MANUFACTURING CO., division of Jaeger Machine Co., Columbus 16, Ohio, is offering a multi-purpose 35-lb. submersible electric pump which handles 3,300 g.p.h. at 5-ft. head. The 1½-hp. single-phase motor is hermetically sealed, and the pump is said to be corrosion resistant, even in salt water. Uses suggested by the manufacturer are for pumping out flooded pits at ready-mix plants and general utility pumping in plant and yard. Float switch is standard equipment for automatic operation. A built-in thermal overload protector cuts off power if motor overheats and restarts when motor cools.

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## All-Purpose Lift Truck

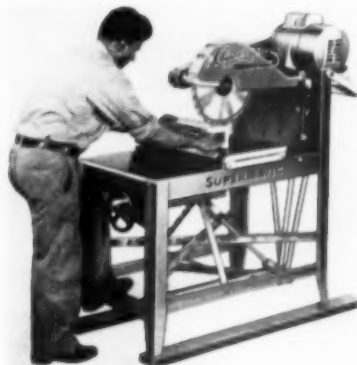


HYSTER CO., 2902 N. E. Clackamas St., Portland 8, Ore., has brought out the Hyster 70 pneumatic-tire lift truck with capacity to handle 7000-lb. loads. Designed to meet the needs of concrete products manufacturers and other firms requiring a heavy-duty maneuverable truck to handle large loads within confined yard and storage areas, the Hyster 70 has a turning radius of 100-in. and a length of 106½-in. It is powered by a 70-hp. Hercules gas-

oline engine which develops a rated torque of 182 lb.-ft. at 1200 r.p.m. Hydraulic booster type power steering is standard equipment.

Enter 316 on Reader Card

## Masonry Saw



CLIPPER MANUFACTURING CO., 2800 Warwick, Kansas City 8, Mo., announces the Supermatic masonry saw. Special features are the Sta-Level cutting head and Hi Lo control wheel. Automatic positioning of the head is achieved by a few turns of the wheel.

The heavy-duty cutting head is powered by a 2-hp. continuous duty General Electric motor which delivers up to 6¼ hp. Five operations are possible with the Supermatic. From wet and dry masonry cutting, it is convertible to a light duty concrete and track saw. Frame extensions increase saw width up to 6 ft. to cut sills, copings and large stone and masonry units. A wheel-a-bout kit is available to increase portability of the saw.

Enter 317 on Reader Card

## Diamond Blades

CONSOLIDATED DIAMOND TOOL CORP., 320 Yonkers Ave., Yonkers, N.Y., has added new specifications to its line of carbide bonded diamond blades. The "NTB" bond is intended for general purpose masonry cutting. It is said to provide a good balance between life and speed on all masonry materials from glazed tile to brick and block. The "NTC" bond is designed for cutting of concrete with non-abrasive aggregates such as green concrete with limestone aggregate and cured concrete with gravel aggregate.

Enter 318 on Reader Card

## Radio Squelch System

GENERAL ELECTRIC CO., Communication Products Dept., Electronics Park, Syracuse, N.Y., announces Channel Guard, a new tone squelch system which makes it possible for mobile radio users to lock out all signals except those from their own transmitters, tone-coded for positive recognition by receivers. One of the features is "automatic monitoring" before transmission, enabling the operator to determine whether the channel is in use when he picks up his microphone.

Channel Guard is used in conjunction with standard receiver squelch. Therefore, mobile units with this feature may be operated in a non-Channel-Guarded system when desired, and the operator may choose between Channel Guard and standard squelch at will. The new product is available in kit form for installation in Progress Line equipment now in service.

Enter 319 on Reader Card

## Truck Mixers



WILLARD CONCRETE MACHINERY CO., 11700 Wright Road, Lynwood, Calif., has announced new 5- to 7-cu. yd. "Mixomatic" truck mixers featuring front engine power take-off with Fordomatic transmission. Four discharge speeds are provided, allowing flexibility of concrete flow. Additional features are the new hopper designed for faster charging, a three-way quick shut-off water valve and splash guards from fender to frame for drum protection. The total weight of a 7-cu. yd. truck mixer is about 6,800 lb.

Enter 320 on Reader Card

## Mix Recorder

BERGEN MACHINE & TOOL CO., INC., 189 Franklin Ave., Nutley, N.J., offers a positive check on number of mixes per shift and duration of mixing time on each shift. No. 8635M relay is used in connection with a No. 8635 recorder, or with one of the two pens in a No. 8643 recorder. Amperage jumps during mixing time actuate the relay.

Enter 321 on Reader Card

(Continued on page 216)



## GOFF KIRBY READY MIX COMPANY DISPATCHES TRUCKS BY RADIO, SAVES MONEY ON HAULING

**Cleveland, Ohio Firm Operates 70 Trucks From Four Plants—Finds General Electric 2-Way Radio Helps Keep Costs Down!**

Goff Kirby is one of Ohio's largest ready mix concrete firms. Its rolling stock is a familiar sight on construction projects throughout the Cleveland area. Last year, Goff Kirby Ready Mix Company was the only outside concrete supplier to deliver ready mix to the Ohio Turnpike project.

### **32 Trucks Have G-E Radio!**

Nearly half the company's fleet is G-E radio equipped. These drivers are in constant contact with each of the four GK plants. Dispatch orders, changes, and special instructions by radio help make sure that loads get to a job on schedule. When breakdowns occur, the GK repair vehicle is on the scene in record time.

### **Radio Helps Keep Hauling Costs Down!**

Edwin Harper, Goff Kirby president, reports that most of the cost of concrete is in the hauling charges. Typical rental of a concrete truck in his city is \$11.50

per hour. By eliminating truck waiting time and driver overtime you save money. General Electric 2-way radio helps keep these costs down.



### **Radio Can Help Your Operation, Too!**

Goff Kirby is a typical example of progressive management in the concrete business. Your G-E Communications Counselor can tell you of others, show you how G-E Progress Line Radio can save you money. Call him in, or, write: *General Electric Company, Communication Equipment, Section C1447, Electronics Park, Syracuse, New York.*

*Progress Is Our Most Important Product*

**GENERAL  ELECTRIC**

Enter 1490 on Reader Card

## NEW MACHINERY

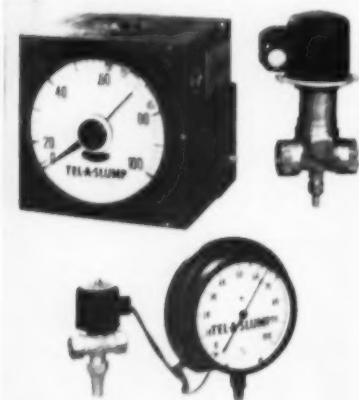
(Continued from page 244)

### Semi-Dump Trailer

COOK BROS. EQUIPMENT CO., 3334 San Fernando Road, Los Angeles, Calif., has developed the Stabilift "frameless" semi-dump trailer. Carrying a 20-ton legal payload, the semi-trailer is said to possess stability which eliminates the danger of tipping and permits its use on all types of terrain.

Enter 322 on Reader Card

### Slump Control



CONCRETE CONTROLS CORP., 1012 E. Geneva Road, Wheaton, Ill., announces two new Dial-A-Matic Tel-A-Slump models: DTIS 1500, for gas or diesel driven mixers (lower photo); and DETS 6000 for electric driven mixers (upper photo.) Slump control is said to be possible regardless of changes in moisture content of the aggregates. An automatic device actuated by the Dial-A-Matic is connected to the solenoid valve, keeping it open until enough water has been added to the mix. The unit can be adjusted by the operator for different slump requirements.

Enter 323 on Reader Card

### PTO Unit

INTERNATIONAL HARVESTER CO., Motor Truck Division, 180 N. Michigan Ave., Chicago 1, Ill., announces a front-mounted power-take-off unit for field installation on heavy-duty International trucks with Red Diamond engines. The assembly, designed primarily for transit-mix trucks, has a rated capacity of 50 hp. at 2,100 r.p.m. It drives a shaft attached to a mixer transmission which in turn furnishes power at reduced speed to the mixer barrel.

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### Concrete Mold

R. L. SPILLMAN CO., 1535 Frebis Ave., Columbus, Ohio, has designed a parking block for bicycles, and is making available the metal mold for its manufacture. The block will handle all size tires used in this country.

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### Protective Coating

WEST CHESTER CHEMICAL CO., Box 39, West Chester, Penn., is introducing Maintz, a hypalon-based maintenance coating developed to provide protection against severe chemical and weather exposure. It is based on DuPont's chlorosulfonated polyethylene which is combined with silicone and other resins. Maintz is said to form a tough, resilient coating with sufficient elasticity to withstand extremes of expansion or contraction without cracking, even in temperatures to minus 40 deg. Standard colors are black, white and gray, but pastels can be supplied to specification.

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### Ready-Mix Carrier



CONCRETE CONTROLS CORP., 1012 E. Geneva Rd., Wheaton, Ill., has introduced a ready-mix carrier with axles powered for off-road operation. The axles are controlled from the cab and can go forward or backward with five ratios available. Specifications include a drum of 8½- to 9-cu. yd. mixing capacity, 11½-cu. yd. agitation capacity; roller chain drum drive, Continental No. 427 engine; power transmission; 150-gal. air water system, and hydraulic chute.

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### Intercom System

TALK-A-PHONE CO., 1512 S. Pulaski Road, Chicago 23, Ill., announces a six-station selective wireless intercom system designed to operate on any one of six channels without interference with other communication within the system. Selective wireless staff stations and selective paging with reply are featured in the model. The wireless staffs are designed to operate in combination with the Talk-A-Phone selective wireless masters and can be used separately as well as in groups of two or more stations to provide individual wireless systems.

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### Forklift Truck



C. RINKIN AND H. OLSON, 725 E. Huntington Drive, Monrovia, Calif., are producing the Rinson forklift truck for yard-to-scaffold block handling. The unit loads block on the truck at the yard (upper photo); then is coupled to the delivery truck for towing at highway speeds to the construction site (lower photo); finally, it stacks the block wherever needed by the contractor. The unit has been designed with larger wheels, semi-rigid framing, low center of gravity, and high ground clearance. Block and other materials may be carried over curbs or rough ground with a minimum of tipping problems, it is reported.

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### Abrasive Blades

CHAMPION MANUFACTURING CO., 2028 Washington Ave., St. Louis, Mo., has developed E-Z Cut blades. In the manufacturing process, sintered silicon carbide crystals are sealed between two layers of parchment to assure maintenance of blade specifications. The method is said to produce a masonry blade that provides easier cutting with less chipping.

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END


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Roebling Bulletin PC-932 is designed to show what is being done and can be done with prestressed concrete members.

One section is devoted to the details and operation of casting beds. Another section gives engineering data for tensioning strands.

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The new highway jobs specify low slump, "Inspection Type" concrete. To be ready for it, to assure *future profits*, you're going to need the right kind of equipment.

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The new Smiths are available now — built *especially* for low slump concrete. Featuring the fastest charging and fastest discharging mixer made, they carry up to agitator loads without a door.

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- ★ *Shorter, big diameter drum* means faster free-flow action. Smith T-shaped blades pull aggregates to big diameter section of drum, where they are lifted out of the mass and turned over.
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A-4013-1P



Edward J. Nunan, Buffalo Slag Co., was one of the several presiding officers at the association's convention.



Another presiding officer, M. Eugene Sundt

## National Ready Mixed Concrete Association's annual meeting

**T**HE NATIONAL READY MIXED CONCRETE ASSOCIATION held its 27th annual convention February 11 through 14 at the Statler Hotel in Los Angeles, in conjunction with the National Sand and Gravel Association. Representatives came from all over the United States and from several other countries to discuss common problems and to hear the foremost men in the field speak.

The highway program loomed biggest in the discussions, giving a note of optimism to the meeting. Most of the sessions were aimed at the managerial aspects of the industries rather than at specific production problems, and all were well attended.

The Southern California Ready Mixed Concrete Association extended its hospitality to the group, and with the Southern California Rock Products Association sponsored an excellent program for the record number of ladies in attendance.

Monday afternoon a joint meeting was devoted to a conference on opera-

tion of state and area associations.

Tuesday morning Robert Mitchell, president of the association, delivered his address and conducted the meeting. Eric C. Ryberg spoke on insurance and Glenn C. Cook's paper on industrial radio was read and discussed. Elections followed, and John W. Roberts was named president for 1957, with M. Eugene Sundt and F. E. Schouweiler as vice-presidents and John B. Donovan as treasurer.

At the conclusion of the session, safety trophies were awarded. The Class A award for plants producing over 250,000 cubic yards was won by Anderson Concrete Corp. of Columbus, Ohio; the 100,000-250,000 cubic yards Class B prize went to Winkworth Fuel and Supply Co. of Detroit; and Stewart and Nuss, Inc., of Fresno, took the Class C 50,000-100,000 award. The award for Class D, 25,000-50,000 cubic yards, went to Kuhns Concrete Co. of Springfield, Ohio; and the Trumbower Co. of Nazareth, Pa., received the Class E award.

Wednesday morning F. P. Gemmer presided over a joint public relations session. Speakers were Ralph H. Anderson and E. K. Davison, and they were followed by a panel discussion on the subject. Robert Mitchell presided over the joint luncheon that followed, and the Hon. Barry M. Goldwater, U. S. Senator from Arizona, was the guest speaker.

Fred P. Curtis presided over the afternoon session devoted to accounting. New depreciation regulations were discussed by John W. Murphy, and taxes on motor vehicles imposed by the Highway Revenue Act of 1956 were explained by Kenneth E. Tobin Jr. At a simultaneous meeting William J. Hicklin led talks on calculating proportions for concrete. Members of both associations heard Stanton Walker, Fred F. Bartel and Delmar L. Bloem discuss various methods.

Thursday morning the ready-mixed concrete group met separately, with Edward J. Nunan presiding. Stanton Walker discussed standards for ready



Members of a panel discussion on the control of dust in batching operations were, from left to right: Ralph H. Anderson, President of Anderson Concrete Corporation; Virgil Owen, Pacific Cement and Aggregates, Inc.; Robert J. Hummel, Vice President, Consumers Company and Thomas L. Amis, Wamix, Inc.



Dick Probst and Charles Pomeroy, Jr.



Ray F. Wood came all the way from Sydney, Australia



Left to right: C. S. Smythe, C. Smythe, Ltd. of Toronto, Ontario, Canada; H. F. Grightmire, Permanent Transit Mix Concrete, Ltd., Brockville, Ontario, Canada and Bruce N. Lloyd, Trent Valley Sand and Stone Co., Brighton, Canada



Left to right: John Pesce, Campanella and Card Ready Mixed Concrete Co.; Jack Vassalotti, Riverside Sand and Gravel Co.; Louis C. Schilling, I. E. Schilling Co. and Henry D. Nesse, Empire Concrete Products Co., Inc.

## N.R.M.C.A. MEETING

(Continued from page 249)

mixed concrete and a panel discussion followed on the use of lightweight aggregates. The speakers described various types of settling basins from which some salable aggregate was recovered and many ideas and suggestions were advanced.

A simultaneous joint session under the leadership of Noel J. Redmond heard John T. Sapienza, counsel for the associations, speak on proposed changes in the federal tax laws, and Charles A. Horsky, counsel for the associations, examine the legality of meeting competitors' lower delivered prices. James D. Piper of the Portland Cement Association discussed promoting ready mixed concrete in the pavement market. A panel considered the question of whether the ready mixed concrete producer will be looking for business this year.

In the afternoon Harold E. Bender presided over a joint session that covered three subjects: J. Richard Glade told the members what organizations could do to reduce unemployment insurance benefit costs, Richard W. Lund spoke on effective organization by employers for group bargaining with labor unions and Vincent P. Ahearn, executive secretary, reviewed the political climate for business in 1957.

M. Eugene Sundt headed a concurrent session for the ready-mix group. Delmar Bloem discussed the effects of curing and moisture distribution on measured flexural strength of concrete, and cautioned his hearers about bidding on jobs where flexural strengths were specified. Robert E. Tobin explained a quick method of determining the cement content of green concrete, and Stanton Walker and Walter K. Wagner reviewed the cement testing programs.

Friday was devoted to the field trips to Irwindale and South Pasadena.

END



Robert Mitchell, President, Consolidated Rock Products Co. and Carder Livingston, President, Livingstone Rock and Gravel Co., Inc.

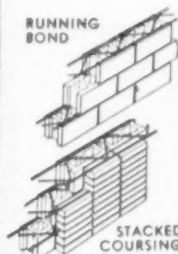
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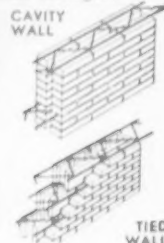
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Wt. per 1000 lin. ft.	247 lb.	250 lb.	257 lb.	266 lb.	276 lb.	282 lb.
Standard Dur-O-wal	4-S	6-S	8-S	10-S	12-S	13-S
Wt. per 1000 lin. ft.	178 lb.	180 lb.	187 lb.	196 lb.	207 lb.	212 lb.

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NOTE — In determining whether to specify Standard weight or Extra Heavy weight Dur-O-wal, comparisons in following table should be properly evaluated:

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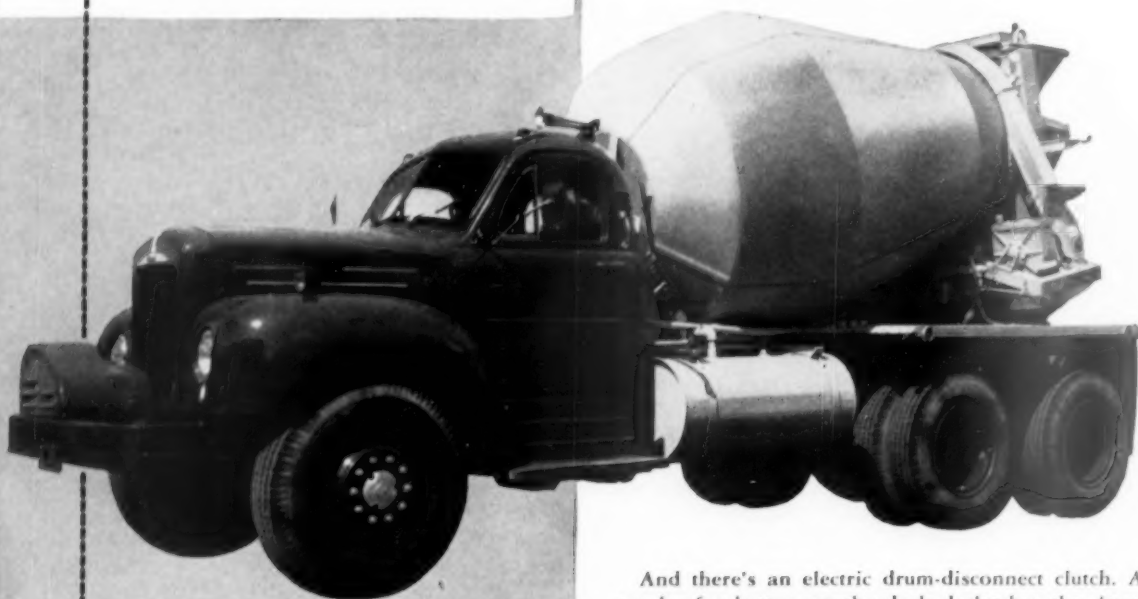
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# It all adds up to THIS!

**50: A producer views the ready-mixed concrete business. This article, the first of two parts, deals with the adequacy of cement supply**

By JAMES A. NICHOLSON\*

**T**HE SUCCESS ENJOYED by an individual ready-mix producer is largely determined by how well he faces the big problems. Country-wide in recent years, the really big problem for most producers has been the adequacy of cement supply.

A ten year cement shortage problem extending over practically all of North America has been intensified throughout widespread areas by abnormal construction conditions, extensive black market practices, strikes by workers in cement producing plants, shortages of cement delivery equipment, cement companies' reactions to Basing Point Decisions of the Supreme Court, preferential treatment of road construction requirements, tie-in sales with mortar and other products, out of area cement consignments, efforts of cement companies to improve positions in more favorable markets and a number of other factors.

Individual ready-mixed producers have improved their cement supply situation by providing additional storage; widening their bases of supply (i. e., getting more cement companies to ship); purchasing at higher cost additional cement from fringe area shippers; landing highway and turnpike contracts for which the cement industry is willing to make extra cement available; and paying black market prices. The propriety of actions taken by some producers in short supply cannot be defended.

\*Pres., Nicholson Concrete Co., Toledo, Ohio

**In explanation** of the cement industry's thinking on the cement shortage problem, statements along this line have been made:—All over the United States producers of cement have substantially increased production capacity. During recent years an increasing proportion of the total cement production has been going to the ready mixed industry. Some companies have actually expanded production beyond sound limits. Profit earnings, while high, are not realistic because of inadequate depreciation allowances. The cement industry has shown its recognition of the ready-mix industry by cooperating with the National Ready Mixed Concrete Association in such nationwide efforts as the promotion of the city street paving program.

With these statements and even stronger declarations, I heartily agree. On the whole, I believe that the record of the cement industry is a very good one. In their relations with the ready-mixed industry, many cement companies have done outstanding jobs. However, it is my firm conviction that too many good members of the ready-mix concrete industry have been unnecessarily, and irreparably, hurt.

In certain large and small markets, some deplorable conditions have existed. Some building supply dealers, ready-mixed operators, truckers, and others with construction industry connections have seemed to feel that it was perfectly all right to do just about everything in the book to get a plenti-

ful supply of cement, regardless whether the cement was to be used in the regular production of ready mixed concrete, retailed at abortive profit or channeled into the black market.

Loads of cement originally consigned to small town dealers have shown up (sometimes intact) in the big city markets. Cement sold originally to Canadian outlets has been used in the United States. Cement that was distributed to customers in one of the states has been used at great cost on Canadian projects. Eastern cement has appeared in Midwestern black markets. Added to such widespread incidents is the extensive use of a considerable volume of foreign cement, which is quite an interesting story in itself.

**For individual producers** a cement shortage situation may mean one or more of the following: bankruptcy, nervous breakdown, loss of trade to competitors, severe financial loss, closing down of plants, reduced operating efficiency, going out of business, sharply reduced profits, complications in handling, weighing and mixing procedures, higher operating costs, interference with customer service and additional job troubles involving concrete quality.

In addition to the harm done to profits and service, quality producers realize that the cement shortage situation has created serious problems in-

(Continued on page 254)

## NICHOLSON

(Continued from page 253)

volving concrete quality. To economically handle cement, producers have had to put regular cement, air entraining cement and slag cement into the same silos; light cement has been put on top of dark cement. Because of conditions that are practically beyond their control, producers have had to take chances on the slump, yield, strength, air content and even color of their hardened concrete.

On occasion, in successive loads to the same jobs, different brands or types of cement have necessarily been used. During the same day, concrete producers have had to put into the same silos different brands and different types of cement; a load of hot cement (225 deg. or higher) has been put on top of a load of cool cement (around 120 deg.); and cement of high strength characteristics put over cement of low strength characteristics. All this means that quality control is going out the window.

"Cement's cement" is a casual remark that some cement salesmen and ready-mix producers like to use. Nevertheless, cements vary considerably. Cements from different sources, and different loads of cement from a given source, may vary considerably in strength producing properties, in water demand for a given consistency or mortar flow and in other important characteristics. Because of different variations in cement characteristics, concretes of the same mix design and using the same aggregates may vary considerably in strength results and in other important ways. By keeping cements separated and by consistently using one cement at a given plant and on a given job, a producer can help operating personnel produce a better, more uniform quality concrete.

**I don't believe that the cement shortage is a legitimate excuse for all the additional handling and quality problems that some producers have had to face. With a little extra cooperation from each cement supplier, much of the confusion could have been eliminated.**

Many producers have long had the opinion that they should be able to buy tested cement that is approved for and can be used on all construction projects. Even in cement shortage areas, a producer may be forced to set aside a special silo to separately handle a state highway job, work for the Corps of Engineers or a large private project. It certainly seems reasonable to expect that the different specification agencies could get together with ce-

ment manufacturers and agree upon a method whereby a ready-mixed concrete company could buy an approved cement that the concrete producer could use on all specification jobs as well as in his regular line of business.

On most problems (e.g., labor relations or pricing increases) competitive producers generally face comparable situations. On cement supply, one or two producers might enjoy all the advantages. These would be producers who have dependable sources of cement supply and can count on getting practically their entire yearly requirements of cement as needed and at local market prices. These producers could realistically be called the "haves." Ready-mix companies that had to buy considerable quantities of their annual cement requirements out of area or were unable to buy any local cement (or price-setting cement), could just as realistically be termed the "have nots."

Cement costs for this grouping are entirely out of line with competition. In markets where high selling prices prevail, "have not" producers make normal or below normal profits, while the "have" companies make abnormally high profits. In tough competitive markets, "have not" producers can operate successfully only by catering to shortage customers who are willing to pay a higher price for concrete and service.

**A market in which all producers are forced to buy some out of area cement is one situation; a market in which a producer is forced to buy 20 to 40 percent of cement out of area and has to compete against a producer able to get approximately 100 percent of his cement locally is an entirely different problem. His problem is especially rough when he's in that predicament because his regular cement suppliers let him down.**

"Haves" and "have nots" come in all shapes and descriptions. Some "haves" are so strong that they can practically write their own tickets. Some "haves" have strong tie-ins with individual cement companies. Others can count on a number of dependable suppliers. As might be expected, the "have nots" are mainly newcomers to the ready-mix industry. However, one can find a number of markets where old, well established firms have had more difficulty in improving their cement supply situation than have a rather new producer or a ready-mixed company that had formerly purchased little or absolutely no cement from that source.

When Herbert Jahnke of New Orleans was president of the National Ready Mixed Concrete Association,

he made a valiant effort to bring about improved relations between the cement and ready-mix concrete industries. Mr. Jahnke took forceful positions on both the cement shortage situation and the cement industry's pricing policy. During the past several years, other N.R.M.C.A. officials have aggressively worked to find better answers to these important problems. Largely because of the "have" and "have not" pattern in cement supply, action on that problem at the association level (state and national) has not proved too successful.

**Possibly, successful action at the association level has also been hurt by the negative attitude shown by some cement company executives. However, in recent years, many ready-mix producers have been heartened by the more realistic positions taken by cement company presidents who have been principal speakers at National Ready Mixed Conventions and have spoken plainly and factually on inter-industry problems.**

In the ready-mix industry, weather is an important factor in determining the success of a year's operation. In shortage situations, a producer can be hurt by extended periods of both good and bad weather. A supplier's refusal to hold cement not used during a given period can be quite a blow. After bad weather ends, even though the unused portion of cement has been taken away, the ready-mix producer still has the deferred business to service, plus his regular orders. With good weather prevailing over an extended period, during which time there is a limit of so many barrels per week or month, a producer will most likely be forced to close down his plant for a considerable part of the time.

Efficiently operated cement companies have generally found that with proper care and application, they can make daily, weekly, monthly and yearly estimates on production and shipments so that their customers, including ready-mix producers, can develop reliable cement schedules for the year ahead on which they can do their planning.

**A ready-mix producer should be able to find out in late summer or early fall approximately what cement shipments he can get for the following year. To make intelligent plans for future operations, a producer needs to know at least six months in advance the approximate amount of cement that will be available during the coming year. Many producers haven't been given annual cement allocations until after the new year had already started.**

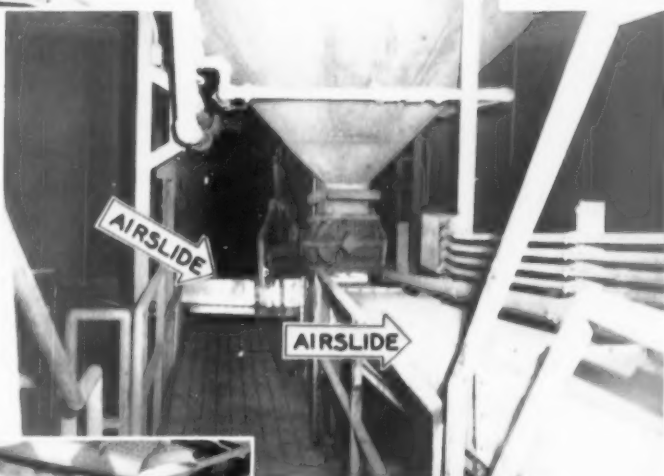
(Continued on page 258)



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Conveying cement from silos to hopper-bottom car.



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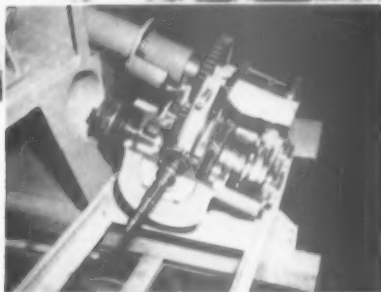
I also learned that one of the basic

reasons for Hi-Up performance is Worthington's big research program on concrete mixing. They've built their research findings right into the Hi-Up design—and you can see the results in the quality of concrete it delivers.

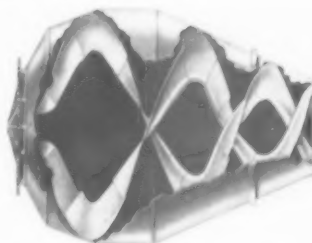
Every man in this business ought to see a MIXERAMA demonstration—it certainly opened *my* eyes. For me, there's no better truck mixer than the Hi-Up."

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See the Hi-Up in MIXERAMA or see it at your Worthington distributor. Worthington Corporation, Concrete Machinery Division, Section R.6.1A, Plainfield, New Jersey.



*Toughest transmission built today. No adaptation of commercial unit, it's designed for mixer use. Single-lever operation for easy control from either end.*



*Beating this drum is impossible! Drum and blades are made of abrasion-resistant steel. Blade design gives thorough mixing, fast discharge. Advanced water system for precision mixing.*



# WORTHINGTON



If It's a Construction Job, It's a  Job

V-Belts • QD Sheaves • Air Compressors • Air Tools • De-Watering Pumps • Truck Mixers

# COMMENT

## from the BUTLER ENGINEER Of Expansion and The Sensational TX-4

You know, in a manner of speaking we are operating a store here at Butler Bin.

We don't have merchandise on shelves but our stock in trade is engineering knowledge and long, long experience. Try dealing with our store. I think the quality will become evident.

Incidentally we've expanded the floor space in our engineering store so we're ready. We've greatly enlarged the fabricating area . . . and for good measure we're putting in a new and larger scale department.

Just by the way of evidence of the fantastic growth in the Ready Mix industry we're designing a Ready Mix Plant that will be completely and automatically controlled by TWO punched card batchers. Who could have dreamed of such production—say ten—no even five years ago.

One gets wondering where all the incredible volume of concrete goes. But stop and think. Sure, there's a lot of big building construction—and the highway program eats up concrete with a ravenous appetite. But how do you account for the enormous number of Ready Mix Plants even in very small communities. That, gentlemen, is where a perfectly huge volume goes. It's the home-owner who decides to put in a concrete driveway . . . a walk to his front door . . . the new subdivisions.

Ask yourself how much concrete you have in your own yard. OK? Now multiply that by millions!

*Ask us—if you're a Roadbuilder—about the new Butler automatic TX-4 Roadbuilder's Plant. Built to handle 1, 2, 3 or 4 dual drum pavers. All one man operated.*

Best regards—

*The Butler Engineer*

BUTLER BIN COMPANY  
WAUKESHA, WISCONSIN

Enter 1562 on Reader Card

258

## NICHOLSON

(Continued from page 254)

Some cement companies limit annual commitments made at the last minute by specifying monthly or even weekly and daily allocations. In some commitments, if a producer doesn't use a given percentage of the annual cement commitment in one month, the unused amount is irretrievably lost; if a given percentage is exceeded in one month, the cement companies have the right to deduct the exceeded amount from shipments of the following months. If a producer is caught in one of these shortage vices, he might wish to suggest to his cement suppliers that one or more of the following alternates be made available to him: (1) spread the amount not taken over the next quarter; (2) pay for the balance and store the cement at the mill, coupled with an understanding that delivery will be taken within 90 days; (3) take into consideration the part played by weather and make a complete re-allocation that is fair to all customers; (4) allow producers to order out untaken balances at any time of year other than during peak building months. The customer is entitled to have some flexibility on cement commitments or allocations.

The manner in which members of the portland cement industry and representatives of the Portland Cement Association have approached the problem of adequate supply for highway construction has produced results. On highway work, commitments made by cement companies have been largely carried out. In sales and distribution efforts in that field, there seems to be evidence of team play. The approach to the supply problems of the ready-mix industry has not been as positive, forthright, or successful. In the future, it is to be hoped that all cement companies will be as successful in living up to commitments made to producers as they have been on promises involving highway work.

As the cement shortage has been with us for a very long time, it seems that by now some sort of uniform practices should have been developed for setting up cement commitments and allocations. After ten years of shortages, there should be some pattern on which one could depend. About the only pattern that can be discerned is the insistence of cement industry representatives that any solution to the cement shortage situation must be worked out at the local level with each ready-mix producer meeting with his own suppliers of cement.

There have been many comments made that some cement companies' representation in certain markets has

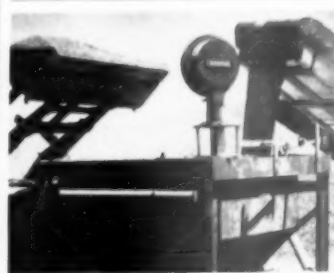
not been what it should be. Many producers think that it's time for a new era of supplier-customer relations. The day of just visiting or being invited out for lunch or a drink should be over. In calls on producers, cement salesmen should come prepared to offer something worthwhile. Producers would like to hear of some important developments in the industry or of some big jobs under consideration in the area. They would like to be told about and given test results on important work conducted by the P.C.A. They would like to be called on by cement salesmen who are qualified to offer good suggestions for improving the handling of winter or hot weather concrete.

Producers would like to hear a salesman say that his company is prepared to ship cement that has the approval of all specification agencies. They would find it refreshing to be reminded that it would be worth their while to read an article in a given trade magazine, attend an A.C.I. meeting or show a certain P.C.A. film to employees and customers. Producers would like to get back to the day when cement salesmen are again selling cement.

The importance of producers holding regular meetings with cement sup-

(Continued on page 260)

## For Accuracy + Durability Use **CARDINAL** SUSPENSION HOPPER SCALES



This shows a Cardinal Scale in operation at the Mobile Mix, Inc., plant at Hutchinson, Kans.

CARDINAL tested and proven Dial and Beam Scales are used in many leading concrete batching plants.

CARDINAL SCALES are highly flexible and can easily be installed into any special equipment. Suitable for operation in all hopper sizes and shapes. Capacities: 500 lbs. to 100,000 lbs. Write for full details.

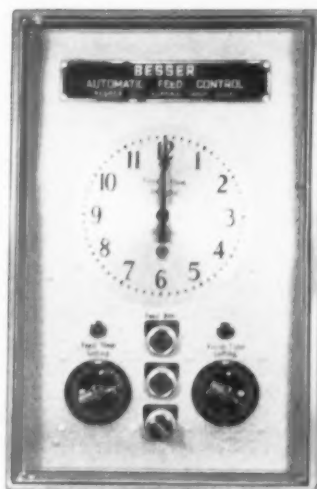
Dept. CP

**CARDINAL SCALE**  
MANUFACTURING CO.

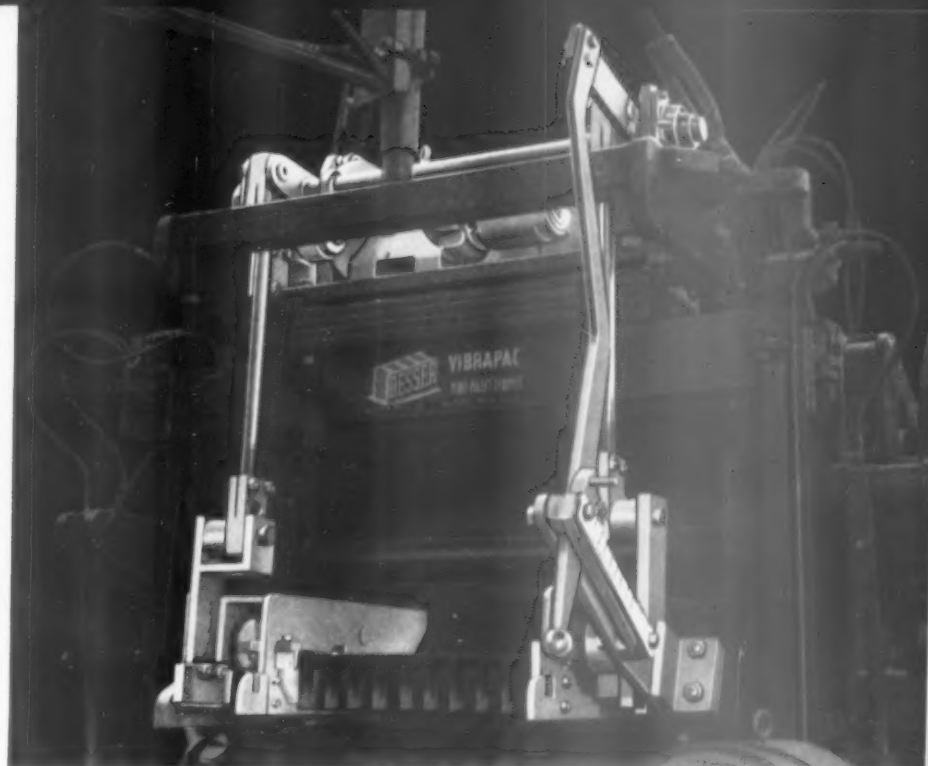
P.O. Box 28, Webb City, Mo.

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Enter 1564 on Reader Card



CONTROL PANEL, with 10" dial indicator. Shows at a glance the exact finish time in seconds and fractions of a second. Panel includes feed and finish time setting — and selector switch for either hand or automatic operation.



## AUTOMATIC FEED CONTROL...

*Another Besser Contribution to the Concrete Block Industry*

**Y**OU want all your block to be of uniform quality. Then it's important to maintain uniform finish time in producing the block. The New Vibrapac provides a visible means of controlling quality. You can actually see the seconds ... even fractions of a second ... consumed in vibration and the length of feed time.

The new Besser Automatic Feed Control mechanism will enable every block maker to produce **BETTER** block even **FASTER**. Get the facts! Contact your nearby Besser representative.

### Here's how you benefit from the New BESSER Automatic Feed Control:

**1 Consistent Production.** The machine speed is kept constant due to automatic compensation for irregular feed or mixture control. Feeding by "guess" is eliminated.

**2 Quality Controlled Block.** Automatically adjusts amount of feed to the mold, assuring uniform finish time and high quality block.

\* \* \*

**3 Less Material Waste.** Controls density of block. No overweight or underweight units. Every block is made to a specified predetermined amount of concrete.

**4 Less Supervision Required.** The electric brain does the "thinking" ... controls the amount of feed for constant uniformity of all types of units. Supervisor merely checks the larger indicator dial to see that quality is being maintained.

A 6-105-1PBCE

# BESSER COMPANY

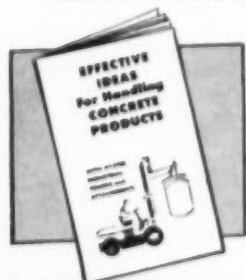
*First in Concrete Block Machines*

BOX 131 ALPENA, MICHIGAN, U.S.A.



The concrete industry's new sound color movie dedicated exclusively to materials handling ideas.

This is a 17-minute movie in color and sound, which your Hyster Dealer will arrange to show you. The film *shows* many time and money-saving handling techniques used by concrete manufacturers to reduce costs (and increase profits).



### ASK FOR THIS FREE BOOKLET

"Effective Ideas for Handling Concrete Products"—a 28-page booklet showing actual handling methods used by concrete manufacturers who have successfully reduced handling costs. Illustrated are many special attachments available for use with lift trucks. Your Hyster Dealer can help you reduce handling costs in your operation. Call him today.



FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands  
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*Hyster Industrial Trucks Increase Profits  
for Concrete Products Manufacturers*

2903-25 N.E. Clackamas Street, Portland 8, Oregon  
1011-25 Myers Street, Danville, Illinois  
Hyster N.V., Nijmegen, The Netherlands

### NICHOLSON

(Continued from page 258)

pliers as advised by cement industry executives is confirmed by urgings of top men in state and national association circles. Vincent Ahearn, able and respected Executive Secretary of the N.R.M.C.A., has consistently stressed the necessity of producers working closely with their cement suppliers frankly discussing their supply problems in an intelligent effort to get their fair share of the available cement. There is no doubt that advance conferences between an individual ready-mix producer and a cement supplier will in many cases prove beneficial. Such conferences are likely to be especially helpful when they can be held in a friendly atmosphere with both parties having confidence in one another.

To get needed quantities of cement, producers should make every effort to sell themselves to cement company executives and other representatives. Any honest, legitimate effort along this line is to be commended. In order to assure cement shipments that will permit efficient, successful operations, producers should work as closely as possible with cement suppliers.

Until Congress passed the Eisenhower Highway Bill, there was every evidence that the long extended cement shortage situation was coming to an end; in fact, had ended in many parts of the country. Fringe area cement producers were meeting price controlling quotations. Substantial freight rate differences were being absorbed. Such practices are still evident and may continue throughout 1957 when the highway program will be just getting under way. Then we'll probably be off to the races again. Then you had better look out. You should plan and act now to assure an adequate supply of cement for your ready-mix operations from 1958 on and for a number of years ahead.

It is a good forecast that adequate cement supply is going to continue to be The Big Problem.

END

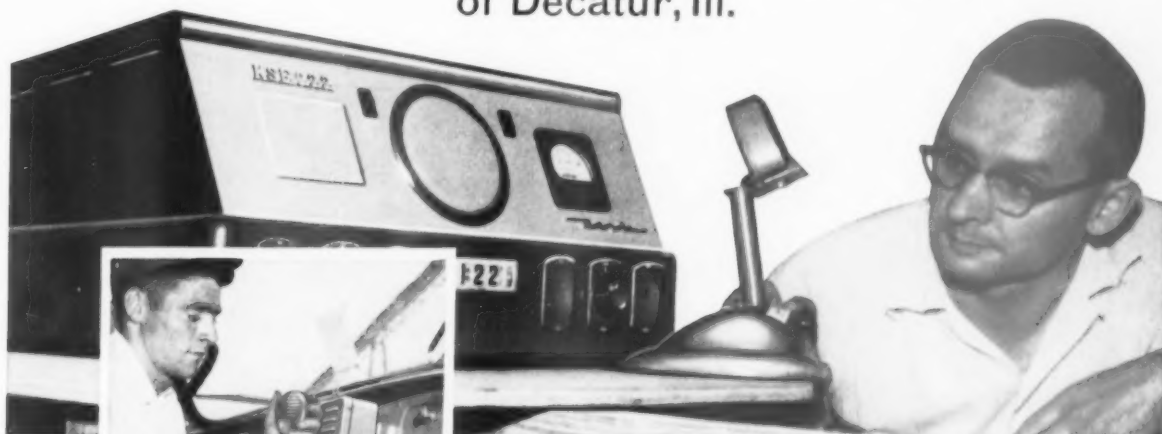
### Rebuilds Plant

McELROY AND WILKEN CO., Columbia Falls, Mont., has reopened its Kalispell, Mont., plant which was damaged by fire early in January, 1957.

VITRICON OF VIRGINIA, INC., Harrisonburg, Va., with William M. Galt, president, has been incorporated to manufacture and sell concrete block.

# 2-WAY RADIO

makes satisfied customers for Travers Supply Co.  
of Decatur, Ill.



## **SPEEDS READY-MIX CONCRETE DELIVERY**

*Direct from the site, Ralph Calfee radios dispatcher John Mosser that another yard is needed to complete the job.*

Photos Courtesy Decatur Herald Review

### **HERE'S HOW RADIO HELPS YOU**

John Stoune, Travers' manager, was arriving at a job in his radio equipped station wagon. Dispatcher Jim Mosser radioed, wondering about a gravel truck due on the job. Stoune answered, "He's dumping the load now—should be back in 20 minutes." Dispatcher Mosser knew exactly when he could schedule that truck for another job. A mixer returning to the plant was heard reporting mechanical trouble. A service truck was immediately sent to him and a spare truck dispatched to fill his next order—as much as an hour saved, not to mention the finisher's temper if he had run out of cement.

If forms aren't ready, the dispatcher gets the report in 30 seconds and can direct the mixer to another site nearby. When an estimate runs short, a fast radio call—direct from the job—gets the concrete there to finish the job. Loose ends at the end of the day are cleaned up easier with radio—drivers and batch plant men get home on time, and expensive overtime payroll is slashed.

With constant dispatcher contact and control, every truck does a bigger job every day, making a more efficient, more profitable operation. And customers are kept serviced, happy and loyal.

### **HERE'S WHY MOTOROLA DOES THE JOB BETTER**

Motorola consistently supplies more mobile and portable radio than all others combined . . . proof of acceptance, experience and quality. The only **COMPLETE** radio communications service—specialized engineering . . . product . . . customer service . . . parts . . . installation . . . maintenance . . . finance . . . lease.

**VERSATILE**—Motorola produces the greatest variety of 2-way radio equipment available—equipment that can be combined to form a custom-made system at production line prices.

**RUGGED**—It is built to take the severe beating that any ready-mix work imposes on it—proven in use for long life, dependability and economy.

**SERVICE**—There is a Motorola Service Station near you. Motorola offers the most complete national service set-up—700 Authorized Service Stations, on call 24 hours a day.

**TERMS**—You can have Motorola 2-way radio on purchase, time payment, or lease (with or without equity).

Get the full facts from a Motorola Communications Engineer. Write, phone or wire TODAY!



## **MOTOROLA**

**COMMUNICATIONS & ELECTRONICS, INC.**

A Subsidiary of Motorola, Inc., 4501 Augusta Boulevard, Chicago 51, Illinois

## the NATIONAL CAR SHAKER costs little — works hard



Profits for you are the result of the National Car Shaker—profits derived from the fast, efficient, complete unloading of aggregates with only **one** operator.

The National Car Shaker combines low cost with the best engineering principles such as all-welded box girder frame, patented rubber-to-rubber motor mount, hardened bolts and nuts and triple V-belt drive.

Many years of trouble-free operation are yours with the National Car Shaker. The first one produced is still in daily operation after eight years of the roughest work.

Write for full information on the money-saving National Car Shaker today—right now.

## NATIONAL CONVEYOR AND SUPPLY COMPANY

356 N. Harding Ave.

Enter 1565 on Reader Card

262

Chicago, Ill.

CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

### SAFE BLOCK PLANT

(Continued from page 227)

operate an entire year without an accident. Safety director Russell W. O'Rourke of Cleveland Builders Supply Co. is quoted as attributing his company's achievement to excellent cooperation between management and supervisory personnel in taking immediate steps to correct unsafe conditions or practices. Under a new "Do It Now" policy adopted just before the 1956 safety contest year was launched, any plant hazard noted during regular safety inspections was subjected at once to corrective measures.

For example, in 1954 there were several foot injuries caused by falling pallets. Under the "Do It Now" program, off-bearers and others exposed to this hazard were required to wear foot shields in addition to safety shoes. Result: a year without foot injuries. Shields are supplied by the company.

Since this company is self insured, the cost of any accident is paid directly out of corporate funds. Thus its policy of sparing neither effort nor expense in a relentless campaign to eliminate accidents has already paid measurable dividends.

The Nailable Cinder Block Corp., winner of the Class B award, is already benefiting from an extremely low workmen's compensation insurance rate as a result of outstanding accomplishments in the cause of accident prevention. This company's plant superintendent, Ellis Barbour, lists low labor turnover as both a cause and a result of the establishment of safe working conditions. Several employees, including Mr. Barbour himself, have been on the job over 30 years.

Nailable Corp. has long gone out of its way to fight accidents. State labor inspectors are asked to subject the company's property to far more thorough and critical inspections than required by regulations. To encourage the wearing of safety shoes, the company pays half the cost. In this case, top management believes that anything done in the cause of good working conditions tends automatically to help in the cause of creating safe working conditions. The company's fine safety record and low labor turnover speak for themselves.

The safety performance of the concrete products division of the Fischer Lime & Cement Co. is really a story in itself. As recently as 1948 commercial insurance carriers were refusing to carry the company's insurance because of its poor safety record. And yet today the company can point with understandable pride to three consecu-

(Continued on page 264)



# Meditate

*for a moment on  
the subject of...*

## CONCRETE LINTEL PROFITS

*these  
Producers  
Did so With  
these Results*

Kent Concrete Lintels are made of block aggregate assuring walls of uniform texture.

They are "laid up" by masons. No steel members or extra craftsmen are required. Delays are avoided and labor costs reduced.

Builders quickly see the advantages and adopt them as standard units.

Block manufacturers add a new item without increasing their sales overhead and gain a profitable market that is simply awaiting their attention.

### FROM A LETTER WRITTEN TO ANOTHER BLOCK MANUFACTURER

"After a year of operation of our Kent Lintelator we have more than tripled our sales of pre-cast lintels. It makes good lintels and makes them fast."

"We highly recommend this machine and are sure you will not make a mistake in purchasing one."

MARTIN BLOCK CORPORATION  
Lansing, Michigan

"We have had a Kent Lintelator in constant use for 4 years and you could not have a more delighted customer. Each year I am more pleased with the product your machine turns out as well as the high return from the investment."

ALLIED CINDER BLOCK CORPORATION  
Harrisonburg-Staunton-Waynesboro, Virginia

"To meet the increased demand for lintels created by your Lintelator we enclose our order for your large machine."

"We already have two Lintelators in our Grossbeck Highway plant and one in our West Chicago plant."

"As a result of the tremendous lintel business built up we are ordering this fourth machine. Please speed it along to us."

BORIN BUILDERS SUPPLY CO.  
Detroit, Michigan

The Kent Lintelator is a simple, compact machine that can be operated by any laborer.

Reinforcing bars are put in position and aggregate fed into the vibrating form. The vibrating pressure plate moves into position and brings the strong lintel to accurate dimensions.

With the pressure plate retracted the mold is rolled over and end members swung out. The front channel which serves as a pallet, is lifted by an air hoist and transferred to the curing rack.

Without exception purchasers of Lintelators are highly pleased with them—a fact that should induce you to immediately learn how you too can obtain this additional profitable business.



*Clip and  
mail coupon  
for information*

**the KENT MACHINE CO.** CUYAHOGA FALLS, OHIO

DIVISION OF THE LAMSON & SESSIONS COMPANY

Canadian Distributor: Wettlaufer Equipment, Ltd., 49 Merton St., Toronto 12, Ontario

I've thought it  
thru and want  
the LINTELATOR  
story without  
delay.

Company  
Address  
City  
Att. of



## Metered Water Means

### STRONGER ROADS AT LOWER COSTS

The Neptune Auto-Stop meter on this Auto-Crete paver gives automatic control of water in every batch for maximum strength concrete. Keeps costs down, too. Batches are just the right consistency all the time... fewer delays for adjustments before pouring.

Operator simply presses buttons to set the amount required... opens the valve... and the meter shuts off at the exact amount automatically.

In ready mix plants, too, Neptune meters are rugged, hard-working controllers of both quality and profits. They're built to give years of dependable service, as the W. G. Block Co.'s experience has proven. Their six Neptune meters have given up to 14 years of service and are still operating satisfactorily. For a better product...

better profits... and long life... get a Neptune meter.

Auto-Stop Meter Sizes: 1" to 3" for cold, warm or hot water. For meter-printed batch tickets investigate the Neptune Print-O-Meter.

Send for free Metering Bulletin 562-IRP.



**NEPTUNE METER COMPANY**  
19 West 50th Street, New York 20, N. Y.

#### Branches in:

ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER  
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IN CANADA: TORONTO 14, ONT.

Enter 1566 on Reader Card

## SAFE BLOCK PLANT

(Continued from page 262)

tive years at the top of N.C.M.A.'s Class C safety competition.

Plant manager W. A. Carter, Sr., attributes this truly remarkable reversal of form to a concerted effort to make safety a way of life for the company and its employees. The program which has sought to accomplish this objective includes thorough medical examinations for new employees, a broad safety program under the supervision of a full-time safety engineer, regular safety meetings with employees and a continual exchange of views on safety matters between management and supervisory personnel.

Recognizing that one of the important advantages of an organized safety competition is an almost automatic change in attitude toward safety problems, one of N.C.M.A.'s important objectives is to bring about much wider participation in its safety program. All member firms are urged to enroll for the contest year ending July 31, 1957.

END

## Plans Larger Quarters

UNIVERSAL CONCRETE PIPE DIVISION, American-Marietta Co., Chicago, Ill., will move its Rochester, N.Y., facilities to larger quarters. L. E. Barrett, plant manager, said construction would start April 1, 1957, with occupancy slated a year later. The new \$500,000 plant will occupy a 20-acre site.

## Opens Concrete Plant

NORTHWEST MATERIALS, INC., Bryan, Ohio, is installing a ready-mixed concrete plant at Butler, Ind., and has scheduled operation to begin April 15, 1957. Automatic batching and transit mix equipment are being used. Tandem-axle trucks mounted with 5-cu. yd. mixers will be radio equipped.

## Winter Concreting

AMERICAN CONCRETE INSTITUTE has published "Recommended Practice for Winter Concreting," prepared by A.C.I. Committee 604, with Lewis H. Tuthill, chairman. The revised A.C.I. standard covers the use of accelerators and anti-freezes; heating of materials; preparation of subgrade; protective coverings and enclosures; curing; and form removal. The price of the paper-bound reprint is 75¢ (50¢ to A.C.I. members). Copies may be obtained by writing American Concrete Institute, 18263 W. McNichols Road, Detroit 19, Mich.



## ...how else could one man do this job so well?

Through exclusive features like these a Gerlinger fork lift truck enables one man to multiply "manpower" and give you a new concept of profitable mass-handling:

- Exclusive Floating-Type Boom Action—faster, friction-free lift
- Counter-active Weight Distribution—better traction and maneuverability
- Pivotal Mounted Steering Assembly—stabilized load on any road
- Heavy-Duty Steel Channel Frame—bonus years of reliable service
- Maximum-Power Torque Converter Drive—smoother operation, less wear

If you move, stack and load unwieldy pipe or other products up to 20 tons, look to the combined Towmotor-Gerlinger line to meet the most diversified specifications. This great new combination brings you the most complete range of fork lift

truck capacities available from one source. More extensive service to match it, too.

Get catalog describing the lift trucks that will do the best job for you. Address: Gerlinger Carrier Co., Dallas, Oregon.

**Leaders for 38 years  
in building Fork Lift  
Trucks and Carriers**



Gerlinger Carrier Company, Dallas, Oregon is a subsidiary of Towmotor Corporation, Cleveland, Ohio

Enter 1496 on Reader Card

CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS



## Look! A Dozen Concrete Handling Problems... **BUCYRUS-ERIE** H-3 Hydrocrane Solves Them All

Problem	Hydrocrane's Solution
1. Travel time between jobs .....	Up to 50-mph travel speeds
2. Handle fragile loads .....	Precision hydraulic control
3. Set up frequently .....	Hydraulic outriggers that set in seconds
4. Work in close quarters .....	Hydraulic telescoping boom, shortest tail swing in its class
5. Make high lifts .....	Boom lengths to 38 feet (Up to 56' with jib)
6. Change boom angle often .....	Working boom hoist
7. Hoist loads rapidly .....	New selector valve greatly increases line speed
8. Reduce "down" time .....	Simple design cuts costly maintenance
9. Lift heavy loads .....	New 5-ton rating
10. Inexperienced operators .....	Clearly marked hand levers —no foot brakes
11. Work on rough, irregular ground .....	Hydraulic outriggers level automatically
12. Weighs loads .....	Load indicator

Yes, the H-3 Hydrocrane is the only 5-ton crane-excavator that does so many jobs so well. Mounted on a new or low-cost used truck, the 5-ton,  $\frac{3}{4}$ -yd. H-3 Hydrocrane is the digging and lifting package that returns more per dollar invested than any other machine in its class. Your Bucyrus-Erie distributor will be pleased to tell you all about the H-3—and about the larger, 10-ton capacity H-5.

189H57

## BUCYRUS-ERIE COMPANY

SOUTH MILWAUKEE, WISCONSIN

Enter 1567 on Reader Card

## KATTERJOHN

(Continued from page 211)

designs and under their supervision. One complete bridge of each length can be produced in a week. Two sections of each length are cast every day.

This work is done out-of-doors, with summer curing under wet burlap covers. In the winter, steam lines keep the forms warm and live steam under tarpaulins is used for curing. Concrete for the bridge units is proportioned in a 1-cu. yd. Go-Corp. paddle mixer. The concrete is carried from the mixer to the forms in a 1-cu. yd. bucket on a 10-ton Gerlinger fork truck. The same equipment is used for removing the bridge sections from the forms, taking them to storage and loading them when called for by highway department trucks.

During the past two years, 42 bridges prefabricated in the Katterjohn plant have been erected. Of these, 35 were for state highway bridges in Kentucky, one for a county bridge in Kentucky, three on state roads in Indiana and three for private projects. A bridge of either the 20 ft. or the 30 ft. length can be erected in four hours using a mobile crane and a crew of four men. Costs of the prefabricated concrete bridges are said to be well below the cost of any other type of bridge used on rural roads. Either size is designed to carry an H-15 load or vehicle weights up to 15,000 lb. per axle with a factor of safety.

A considerable proportion of the plant's block production is lightweight block although limestone aggregate is used for heavy block. Air-entraining portland cement is used for all block. Lightweight block are made with Kintlite, an expanded shale aggregate made by the Kentucky Light Aggregate Company of Louisville. Heavier block are made with sand and crushed limestone aggregate from the River Sand & Gravel Company, Owensboro.

Aggregates are delivered to the plant in hopper bottom cars and transferred to storage piles by a Farquhar car unloader and a 50-ft. portable belt conveyor.

Cement in bulk trucks is delivered from either the Louisville Cement Company, plant at Speed, Ind., or the Lehigh Portland Cement Company plant at Mitchell, Ind. From a receiving hopper, a screw conveyor takes the cement to a Heltzel bucket elevator which carries it to a 1,000 bbl. Heltzel storage bin.

From the Besser Vibrapac machine 60-block racks are taken to the curing kilns by hand trucks. Each of the five

(Continued on page 268)

6½ yd. model, with drum closure, pouring addition to flood control wall for Waterbury Ready-Mixed Concrete Co., Waterbury, Conn.



## You Get Easy, Positive Control with Westinghouse Mixers

• With the Westinghouse drum-control transmission, one lever and the engine throttle you have positive and complete control of the drum for any operation . . . . With the large Westinghouse charging hopper, set the transmission in high and charge the drum as fast as you want to without blowback. . . . Leave the setting in high and the drum, with double-action mixing blades, gives you fast, thorough, customer-satisfying mixing. . . . Set the transmission in low and agitate at 2 r.p.m.

To discharge, reverse the single-lever drum control and discharge as desired — from full blast to a shovelful at a time. No gears to shift.

### And with This Simple and Easy Control You Get

. . . the exclusive Westinghouse fully-enclosed gear drum drive with large ball-and-socket drum mounting. Nothing like it. No chains to break and let you down with a load aboard. Cuts maintenance costs, too.

. . . convenient 3-piece discharge chute. Can be swung away for direct discharge or used in 5, 8 or 12 ft. length. Ratchet or hydraulic control.

. . . sturdy, clean-cut design and construction. Easy to service; longer-lived than most mixers.

Before buying another mixer be sure to see your local Westinghouse Transit Mixer dealer for new 1957 catalog or write to



Demonstrating the easy operation of Westinghouse mixers is this 4'-2" dwarf, weighing 105 lbs., discharging into wheelbarrows with perfect control. He's the regular operator.

Westinghouse Mixers are available in 4½, 5, 5½, and 6½ yd. sizes built to TMMB standards.



### WESTINGHOUSE TRANSIT MIXER DIVISION

LeTourneau-Westinghouse Company • Indianapolis 6, Indiana

Member Truck Mixer Manufacturers Bureau



Enter 1495 on Reader Card

Remember way back when?



WHY DELIVER CONCRETE WITH  
COSTLY, OUT-OF-DATE METHODS?



NOW...

**MONARCH  
DYNA-CHUTE**

**SAVES TIME, COSTS—  
INCREASES PROFITS**

### THE MODERN WAY

Monarch DYNA-CHUTE Hydraulic Controls position the discharge chute on Ready Mix trucks in 8 seconds . . . automatically! Just a flick of the control handle—the chute is lifted, held, or lowered instantly without effort. Saves time, reduces injury, pays for itself, load after load. Send for free folder and name of nearest dealer.



SEND FOR FREE FOLDER

**MONARCH ROAD MACHINERY CO**



1331 B MICHIGAN ST., N.E. — GRAND RAPIDS 3, MICHIGAN

Enter 1568 on Reader Card

No Matter What  
**SIZE...**



No Matter What  
**SHAPE...**



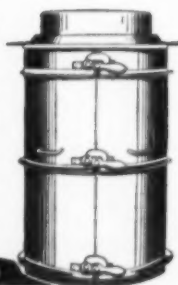
## QUINN CONCRETE PIPE FORMS

**Set The STANDARD For Producing Quality Pipe!**

Over 50 years of experience go into the production of every Quinn Concrete Pipe Form. That's why the Quinn Heavy Duty form is recognized as the STANDARD the world over for producing quality concrete pipe at the lowest cost. Used in making pipe by vibration, spading, or tamping. Sizes for pipe 10" to 120" and larger. Tongue and groove (as shown) or bell end pipe in any length desired. No matter what size, shape, or length pipe you need, there's a Quinn pipe form made to fit your requirements. Write today for our FREE catalog and estimates.

Also Manufacturers of QUINN CONCRETE PIPE MACHINES

**Quinn WIRE & IRON WORKS** BOONE, IOWA



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## KATTERJOHN

(Continued from page 266)

curing kilns holds 24 racks. The curing cycle includes two hours to reach the maximum temperature of 175 deg. F. and after six hours at that temperature the steam is shut off and the block allowed to stand over-night. The block are then removed from the kilns by an Erickson platform truck and taken to the cubing area where they are cubed by hand. Cubed block are taken to storage piles or to delivery trucks by Towmotor two-ton fork lift trucks.

A substantial part of the block production is called for by customers. This Katterjohn plant, however, employs Charles Gaddis & Sons, contract haulers of Owensboro, to make job deliveries using a truck equipped with a Jiffy unloader made by the Eberfield Block Company of Eberfield, Ind. This device handles two cubes at a time.

Split block are made in the Owensboro plant from solid 4 x 8 x 16-in. units cast on the Besser block machine and then run through a splitter made by the Fleming Mfg. Company of Cuba, Mo. The split block are made in natural gray and six pastel shades. Slump block are cast on an Appley block machine in 4 x 4 x 16-in. and 8 x 4 x 16-in. sizes. Single-core fence block are also cast on the Besser machine. The first block of this type used in Owensboro were made during the summer of 1956.

Precast reinforced concrete joists are made in 6, 8 and 10 in. heights in lengths up to 30 ft. A maximum of 24 joists per day of any size can be produced. These joists are made only on customer specifications. They are used for schools, churches and other public buildings. Deliveries are made by contract haulers. In the plant, some of these larger precast units and their forms are moved with the aid of a traveling crane as well as the Towmotor and Gerlinger fork trucks.

Although air-entraining cement is used in the block plant, Protex, an air-entraining agent made by the Autolene Lubricant Company, Denver, is added at the mixer for some of the large precast products.

All plant buildings comprising block plant, warehouse, precast department and office have walls of concrete masonry. The office building, containing the manager's office, bookkeeping department and a plan room has 1,350 sq. ft. of floor space. Half of the total area is taken up by a reception room, an unusual feature of which is a counter built of Katter-Blox laid in

(Continued on page 270)

# ONE MAN HAULED 74,361 CONCRETE BLOCKS DRIVING 4,656 MILES IN 27 DAYS WITH THE **NEW IOWA ★ UNLOADER**



Typical job-site scene,  
showing ease of placing cubes for use.

Fast delivery like that means **EXTRA PROFIT**  
With the **IOWA ★ UNLOADER**, it also means

## **LESS BREAKAGE and CHIPPAGE**

On the job-site, the Iowa ★ Unloader does even more. It puts the load just where it is needed—at ground level or into an excavation as much as 11 feet deep.

The operator has complete control. A 25-foot electric cable lets him activate hydraulic cylinders to move boom, trolley and fork at selective speeds.

No need to jockey truck back and forth. The Iowa ★ Unloader unloads from either side . . . or from the rear . . . even unloads from another truck. Its boom rotates 400°. The extra 40° travel beyond a complete circle lets you unload even when a truck is stopped near a wall or obstruction.

The Iowa ★ Unloader lifts up to 4,000 lbs. at a time . . . handles cubes, pallets, steps, tile, septic tanks and other building materials . . . safely and swiftly. It installs on any truck or trailer bed having channel stringers. Tines of self-balancing fork automatically stay in level position whether empty or loaded.

### **WATERLOO UNLOADER CORP.**

P. O. Box 92

Waterloo, Iowa

Phone AD 2-8588

Let us tell you more about the Iowa ★ Unloader . . . about performance that has brought comments like this from users:

"The chipped corner department is now closed in our business and, believe me, my contractors are happy about it."

WRITE OR TELEPHONE FOR FREE LITERATURE AND PRICES

#### **MAIL COUPON TODAY!**

WATERLOO UNLOADER CORP., P. O. Box 92, Waterloo, Iowa

I am interested in the Iowa ★ Unloader.

☐ I would like more information.

☐ I would like a demonstration.

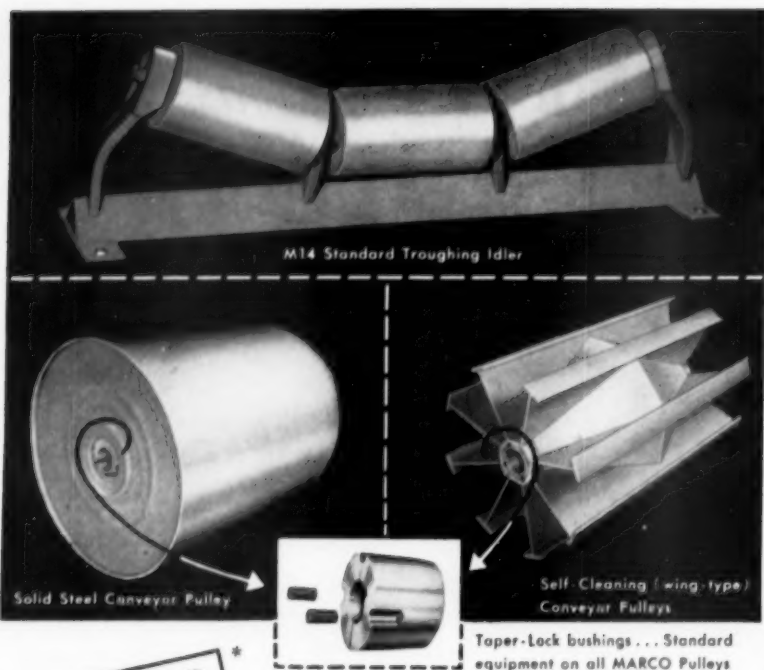
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City \_\_\_\_\_

State \_\_\_\_\_

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## **MARCO** The Complete Line of Modern Conveyor Accessories...

### Engineered to Reduce Your Material Handling Costs

**Belt Conveyor Idlers** — You'll find MARCO engineering makes a big difference in idlers. MARCO idlers are equipped with precision ground, ball bearings. These bearings are designed specifically for conveyor idlers and at 300 revolutions per minute they will carry loads up to 860 lbs. per bearing. The result, — longer service life and lower power requirements.

Each bearing is pre-lubricated and effectively sealed to eliminate field lubrication and reduce maintenance.

The frame is stronger because of its all steel construction. Material build up is kept at a minimum due to the self-shedding base.

Idlers fit any conveyor frame and are available in many types and sizes. Ask for Bulletin ID-2.

**MARCO Solid Steel Pulleys** — Advantages of MARCO pulleys include: machined faces and Taper-Lock bushings, at a competitive price. Both the belt and pulley last longer because the entire pulley face is

machined to insure concentricity with the bore. The Taper-Lock bushings provide the quickest, easiest way to mount or demount pulleys.

**Self-Cleaning (wing-type) Pulleys** — These self-cleaning pulleys pay for themselves many times in longer belt life when installed in elevator boot sections, conveyor tail sections and gravity take up assemblies. These pulleys are of all steel, jig-welded construction and also combine the advantages of machined faces and Taper-Lock bushings.

**Whenever you need conveyor accessories — turn first to MARCO.**

MARCO idlers and both solid steel and self-cleaning pulleys are available in a wide range of sizes for prompt delivery to meet your requirements.

You can save time, trouble and dollars because... MARCO specializes in designing and manufacturing conveyors and accessories. Get the facts from your MARCO Distributor or write E. F. Marsh Engineering Co., St. Louis 10, Mo.



### Engineered MARCO® Products:

Tubular Frame Belt Conveyors • Conveyor Idlers  
Solid Steel and Self-Cleaning Steel Pulleys • Bucket Elevators  
Control Gates • Feeders • Bins

®Trademark Registered

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## KATTERJOHN

(Continued from page 168)

various types of coursing. The entire wall between the office building and the adjoining warehouse is laid up with colored split block and panels of lightweight block.

The North Little Rock, Ark. plant of the Katterjohn company makes only concrete block and concrete brick. Two Besser Vibrapac machines, one a Model B-3-R and the other a Model B-3-M, give the plant a daily productive capacity of 12,000 standard block to meet the lively local demand.

The plant has ten curing kilns designed by the Thermal Engineering Co. of Detroit. Each kiln has capacity for 22 block racks, some of the racks carrying 72 block and some 60 block. The plant was laid out by Besser Company engineers. The conveying and material handling system was set up by the March Engineering Co. of St. Louis, Mo.

About 60 percent of the block production consists of lightweight units made with Denilite from Memphis. Sand and granite block are made with aggregate produced by the Big Rock Stone & Material Co., Little Rock, a subsidiary of Minnesota Mining & Mfg. Co. Type 1 portland cement is used, either from the Okay, Ark. plant of the Ideal Cement Co. or the Cape Girardeau mill of Marquette Cement Mfg. Corp.

Cement is delivered to the plant in hopper bottom railroad cars from which a 90 ft. long screw conveyor takes it to a bucket elevator emptying into an 825 bbl. cement storage silo or to a 325 bbl. cement bin in the batching tower. The bucket elevator, made by the Erie Equipment Co., Erie, Pa., has an hourly capacity of 100 bbl.

Aggregates are unloaded from hopper bottom cars or trucks into an underground hopper. From the hopper a horizontal belt takes the material to a bucket elevator reaching the batching tower bins or by a transfer chute to outside ground level bins over a reclaiming tunnel.

The Allison bins in the batching tower, built in Phoenix, Ariz., contain three compartments holding 90 cu. yd. of aggregate and one compartment for cement.

The four ground level bins each hold 180 tons. Manually controlled gates in the roof of the reclaiming tunnel feed whatever type of aggregate is needed in the batching tower to a conveyor belt in the tunnel for transfer to the tower. The main reclaiming tunnel is 90 ft. long with a cross tunnel

(Continued on page 274)

## Noble-Mobile batching plant on wheels



**gets job 21 miles from  
base and makes it  
pay...batches at job  
site with Noble-Mobile**



*Noble-Mobile at  
site of new Crown-  
Zellerbach plant, Antioch,  
Calif. 10" wheels dismantled for use on  
truck mixers. Supplier: H. W. "Heine"  
Gentry Co., Walnut Creek, Calif.*

Hauled along highway like semi-trailer • Set up in  
one day—no field wiring, footings or crane time re-  
quired on base plant • Aggregates charged with front  
end loader, crane or conveyor • Bulk cement utilized

... batched automatically • Excellent quality control  
Maximum production from mixer trucks—short hauls,  
more yards per day • Production capacity 60 to 100  
yards per hour • Covered by patents pending



### NOBLE BATCHING PLANTS

Portable, semi-portable or stationary plants designed and built by  
Noble Company • 1860 - 7th St., Oakland 20, Calif. TEmplebar 2-5785



Other Noble Company offices: 20950 Center Ridge Road, Cleveland 16, Ohio. EDison 1-3426.  
518 First Ave. North, Seattle, Wash. MUtual 4878 • 117½ W. Manchester, Inglewood, Calif. ORegon 8-4457.

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BIRMINGHAM, Ala., Equipment Service Co., Inc. • PHOENIX, ARIZ., Superior Equipment Co. • DENVER, COLO., Western Machinery Co. • INDIANAPOLIS, IND., Manwaring Machinery Co., Inc. • CEDAR RAPIDS, IOWA, James W. Bell Co., Inc. • LOUISVILLE, KY., Emmett C. Watson Co. • LOS ANGELES, CALIF., Smith-Booth-Usher Co. MIAMI, FLA., Neff Machinery, Inc. • BOSTON, MASS., Hedge & Mattheis Co. BALTIMORE, MD., General Supply & Equipment Co. • DETROIT, MICH., R. G. Moeller Co. • ST. LOUIS, MO., George F. Smith Co. • ST. PAUL, MINN., Borchert-Ingersoll, Inc. • DUNELLEN, N. J., Miller Equipment Co. • CHARLOTTE, N.C., Spartan Equipment Co. • CLEVELAND, OHIO, Wepco Equipment Co. • OKLAHOMA CITY, OKLA., Herd Equipment Co. • PORTLAND, ORE., Clyde Equipment Co. • PHILADELPHIA, PA., Furnival Machinery Co. • PITTSBURGH, PA., Equipment & Supplies, Inc. • NASHVILLE, TENN., Peterson Machinery Co. • AMARILLO, TEX., Plains Machinery Co. • DALLAS, TEX., North Texas Equipment & Supply Co. • EL PASO, TEX., Border Machinery Co. • HOUSTON, TEX., Boehck Engineering Co., Inc. • SAN ANTONIO, TEX., Contractors Machinery Co. • WACO, TEX., Richards Equipment Co. • SALT LAKE CITY, UTAH, Arnold Machinery Co., Inc. • SEATTLE, WASH., Star Machinery Co. • SPOKANE, WASH., Intermountain Equipment Co. • CASPER, WYO., Studer Tractor & Equipment Co., Inc. • VANCOUVER, B. C., Westcoast Equipment Co., Ltd. • MONTREAL, QUE., Laurentide Equipment Co., Ltd. • WINNIPEG, MAN., Huggard Equipment Co., Ltd. • CALGARY, ALB., Precision Machinery & Foundry Co., Ltd. • KANSAS CITY, MO., Funkhouser Machinery Co. CHICAGO, ILL., Arrow Contractors Equipment Co.



## **NOW** cut concrete costs with **FOR-AIR** AIR ENTRAINING AGENT

**FOR-AIR adds air to CONCRETE and increases resistance to freezing and thawing**

Forrer's is foremost again in the concrete field with a superior product — for less cost. The new FOR-AIR 98-B (Air Entraining Agent) adds air to concrete, increases resistance to damage caused by freezing and thawing. Other advantages — increased plasticity of mix, reduced bleeding, decreases water requirements and segregation. It makes concrete more impermeable and acts as an integral waterproofing agent. It does not reduce strength.

- Used on Air Force Runways
  - Approved by State Highway Commissions
  - Conforms to Federal — A. S. T. M. Specifications
  - Available in 5 gal. pails and 55 gal. drums
- Enter 1582 on Reader Card      Order a trial sample today!

### here are the cost-saving facts!

FOR-AIR 98-B is a Concentrate. Just 1/3 ounce of concentrate entrains 5 to 6% Air. Use 2 gallons water to gallon of For-Air mix. (1 gallon makes 3 gallons.) You save over 58% on original cost. Plus saving 200% on freight costs. Order today!

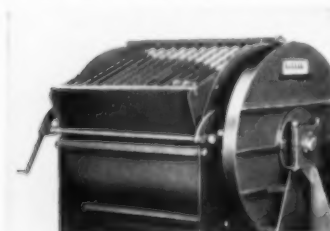


FORRER'S — Division of SPRAY-O-BOND CO.  
2225 N. Humboldt Ave., Milwaukee 12, Wis.

Capacities:  
5-12-18-25-  
30-40-50-75  
cubic feet.

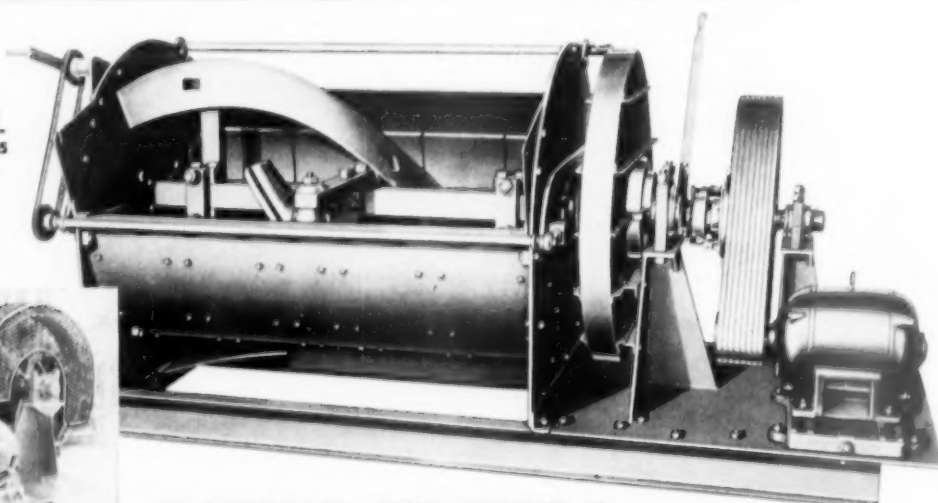


Guard for mixer and pulley serves as an added safety precaution.



Drum grid cover permits quick charging with complete safety.

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## **BATCH MIXERS** Manufactured by the makers of the world-famous **VIBRAPAC**

• Besser Batch Mixers have long been regarded as the standard for the industry. Features include: Twin Spiral Blades made of Ni-Hard abrasion-resisting iron — Quick acting, air-operated discharge gate with strong cylinder action. Entire contents of mixer drum discharged in 15 to 20 sec. — Special alloy shafting ground on bearing

surface to insure proper fit — Steel cut gears operate in a continuous oil bath — Reversible main gear made of special alloy steel, properly stress relieved and hardened to give extra long wear — Fully enclosed, anti-friction bearings assure smooth operation. Write for Bulletin No. 111A.

**BESSER company**

Box 135, Alpena, Mich., U. S. A.  
Complete Equipment for Concrete Block Plants

CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

A7-118

# A new wealth of ideas . . . and extended service . . . building to **CONCRETE PRODUCTS** impressive history of achievements and service

*Beginning with the JUNE issue . . .*

## A BIGGER STAFF TO GIVE YOU MORE EDITORIAL COVERAGE ALONG WITH DEPARTMENTS TO ANALYZE AND GUIDE YOU IN:

HANDLING . . . PROCESSING . . . STORING . . . BUYING . . . MERCHANDISING  
SELLING . . . TRANSPORTING . . . ACCOUNTING . . . PUBLIC RELATIONS

The new CONCRETE PRODUCTS resulted from express demands of producers interested in keeping step with modern operational methods. New, easy-to-read format, with large, informative illustrations, edited and presented for fast reading, quick comprehension. Expanded coverage from AUTHORITY. Complete market coverage

including all phases of operations and management . . . markets and merchandising . . . Modern products and techniques . . . New materials and equipment . . . Complete information on efficient and profitable ready mix and concrete product operations.

### EXCLUSIVELY YOURS—

Devoted to and serving only producers of concrete products:

Block . . . Prestressed . . . Pipe and Tile . . . Conduit . . . Masonry units . . . Bins and Silos . . . Roof and floor systems . . . Vaults . . . Sills . . . Panels . . . Cast stone . . . and other units and specialties . . .

And . . .

All manufacturers of ready mix concrete for any purpose.

The new expanded CONCRETE PRODUCTS will be focused on methods, management, and merchandising problems facing producers in meeting today's booming production demands, and in planning for even greater markets of tomorrow.

Every producer of concrete products or ready mix concrete may continue to receive CONCRETE PRODUCTS without charge by returning the coupon below completely filled out, signed, and attached to his business letterhead.

All others who cannot qualify as a manufacturer or merchandiser of concrete products or ready mix concrete may also receive CONCRETE PRODUCTS at a nominal \$3.00 per year rate, see coupon.

## DON'T MISS THE FIRST ISSUE OF THE NEW, EXPANDED CONCRETE PRODUCTS

BE SURE . . . Fill out and mail. Send this coupon today.

**—START NOW!—**

### A complete, re-designed CONCRETE PRODUCTS Geared to today's producer needs

Make sure you receive and read  
**CONCRETE PRODUCTS**  
EVERY MONTH

Please Attach Filled-In Coupon to  
YOUR BUSINESS LETTERHEAD  
(This is required for Circulation Audit purposes).

The principle concrete product (s) of my company is/are indicated "1", "2", "3", in order of importance below.

Block \_\_\_\_\_ Ready mix Concrete \_\_\_\_\_  
Masonry Units \_\_\_\_\_ Pipe \_\_\_\_\_  
Prestressed Units \_\_\_\_\_ Precast Units \_\_\_\_\_  
Other (What?) \_\_\_\_\_

Please send me CONCRETE PRODUCTS "Free".  
My qualifications listed above.  
Please send me CONCRETE PRODUCTS for \$3.00 per year.  
My business is: \_\_\_\_\_  
Remittance attached \_\_\_\_\_ Bill me \_\_\_\_\_

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Firm \_\_\_\_\_  
Street & No. \_\_\_\_\_  
City and State \_\_\_\_\_  
Your signature \_\_\_\_\_ Title \_\_\_\_\_

List other people in your organization to receive CONCRETE PRODUCTS at your company address

Name \_\_\_\_\_ Title \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_

List other qualified people separately

(Free \_\_\_\_\_ Paid \_\_\_\_\_ [by company])

## KATTERJOHN

(Continued from page 270)

120 ft. long. These tunnels lined with reinforced concrete, are 9 ft. high and 12 ft. wide.

The block machines are served by two 50-cu. ft. Besser mixers located at working floor level. These are charged by skip hoists. An Allison traveling weigh batcher with Howe scales proportions the concrete for both machines.

Two Clark and one Allis-Chalmers 6,000 lb. fork lift truck carry the loaded block racks from the machines to the curing kilns. Block stand in the kiln for preliminary set for two to three hours before the steam is turned on. Then approximately two hours is required to bring the temperature up to 170 deg. F. when the kiln is closed. That temperature is maintained for three hours more and the block are then allowed to soak in the kiln for 8 hours.

Men on the morning shift open the kilns and remove the block racks on fork lift trucks to the cubing area. The block are then cubed with the use of two Besser pneumatic cubing hoists.

A substantial part of the sales from the Little Rock plant are concrete brick which are made in a variety of

colors. These are cast 32 at a time in a special mold on a Besser machine.

The plant is located close to the classification yards of the North Little Rock Terminal, Arkansas Division, Missouri Pacific Railroad. A Missouri Pacific switch runs into the plant.

Harry Shinall is plant manager, Ray Rose is superintendent, Lawrence Phipps is a salesman and Stewart Ethridge is office manager.

END

## Issues Newsletter

THE READY MIXED CONCRETE ASSOCIATION OF WISCONSIN, INC., began publication February 11, 1957, of "The Memo Pad," a newsletter containing information about the industry. Thomas Durkin, executive secretary, is editor.

## Rebuilds Ohio Plant

OHIO CEMENT PRODUCTS CORP., whose McDonald, Ohio, plant was destroyed by fire May 26, 1956, will double its former production in a newly built plant in Niles, Ohio. The \$125,000 electronically-controlled plant will have a capacity of 15,000 to 16,000 block per day. Frank Forney is president of the corporation.

## Wins Driving Award

EARL CHRISTENSEN, truck driver employed by Ready-Mix Concrete Co., Reno, Nev., was named "Driver of the Year" by Nevada Motor Transport Association. Mr. Christensen was honored for his record of 15 years of accident-free driving totaling nearly 300,000 miles.

## Opens Warehouse

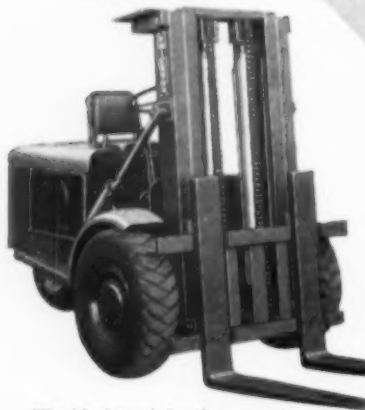
GENERAL CONCRETE PRODUCTS, INC., Van Nuys, Calif., recently opened warehousing facilities at 20345 Walnut Drive, Walnut, Calif. The eight-acre location is scheduled to be the site of a new plant. For the last 16 years the firm has been manufacturing structural and veneer concrete block under the trade names of Slumpstone, Terracrete, Flagcrete, Romacrete and Eldorado Slumpstone.

## Dryer for Concrete Cribbs

IOWA CONCRETE AND SILO CO., Des Moines, Ia., manufactures a forced-air crop dryer for concrete cribbs. The dryer, designed to reduce moisture content of corn from 35 to 15 percent for about one cent a bushel, is located in the center of the crib to provide even and uniform drying of corn.

# put the *Erickson* "workhorse team" to work in your plant!

ERICKSON FK-60  
FORK LIFT TRUCK



The ideal truck for the concrete industry, Ericksons have a proven 30-year record for low-cost handling cubed blocks in the yard—stockpiling, loading and unloading delivery trucks.

Here's the pair of Ericksons that have proven themselves the **BACKBONE OF BLOCK PRODUCTION**. Erickson's rugged dependability and long life have won its reputation as "the workhorse of lift trucks". Erickson trucks are custom-built to fit your needs.

**OVER 1,000  
BLOCK PLANTS  
cut costs with  
*Erickson***

**ERICKSON POWER LIFT TRUCKS, Inc.**

223 St. Anthony Blvd, N. E. • Minneapolis 13, Minn.

ERICKSON AR-TIC-U-LATED  
PLATFORM TRUCK



A revolutionary new idea for speed and maneuverability handling heavy loads in close quarters. This new Erickson is AR-TIC-U-LATED—with a pivot between platform and drive wheels which gives the effect of 4-wheel steering. Platform beds up to 10 or 12 feet long.

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You will like  
*Columbia* service on  
**RACKS, Pallets  
and Turntables!**

**RACKS** — Columbia Heavy-Duty Standard racks can be shipped to your plant within a few days after your order is received. Or, our engineers will custom design racks from your blueprints or measurements to fit your special plant needs without obligation.

**PALLETS** — In most areas throughout the country you can get overnight delivery of Columbia Standard Steel Pallets in  $\frac{1}{4}$ " x 18" x 20", or 5/16" x 18½" x 26" sizes.

**TURNABLES** — Available in one, two, or three rack motor-driven "push-button control" turntables. Also available in manual, semi-portable and fixed position combinations. Quick delivery anywhere.

**Prompt Engineering Design Service, Fast Delivery**

... made possible through district offices and branch manufacturing plants and warehouses strategically located throughout the country.

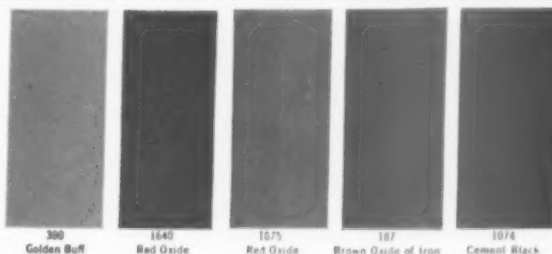


**Columbia MACHINE**

Home Offices: 107 S. Grand, VANCOUVER, Wash.  
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District Offices in: Wisconsin, Illinois, South Carolina, Mississippi, Florida, New Jersey, Virginia, California, Massachusetts, Texas, Montreal, Toronto, Vancouver, B. C.

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## A guide for choosing concrete colors

For producers of split blocks, patio blocks, concrete blocks and other colored concrete products.

Manufacturers of colored concrete products agree... The pigments they use must have these 3 important qualities:

1. A high degree of tinting strength when added to the mix
2. Color uniformity year in, year out
3. The ability to incorporate easily

Manufacturers also require a pigments supplier whose technical department is capable and cooperative, whose shipping service is prompt and dependable.

Point for point, REICHARD-COULSTON quality-controlled pigments and dependable service meet *all* these requirements!

The shades shown above are just 5 of the many concrete colors manufactured by REICHARD-COULSTON. Included are yellows, buffs, maroons, grays, reds.

For a free color card, fill in and mail the coupon. Act now.

**GENERAL RECOMMENDATIONS:** PASTELS (Split blocks and similar products), 2-4 lbs. for each bag of cement. DEEP SHADES (Patio blocks, concrete blocks, etc.), 6-8 lbs. for each bag of cement.

## Reichard-Coulston, Inc.

15 EAST 26th STREET, NEW YORK 10, N. Y.

Warehouses in principal cities; factory, Bethlehem, Pa.  
Over a century of manufacturing and service

Natural  Synthetic

REICHARD-COULSTON, Inc.  
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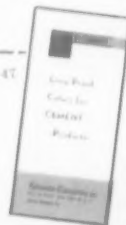
Gentlemen: Please send me a free card of  
REICHARD-COULSTON concrete colors.

My name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

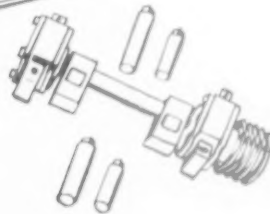
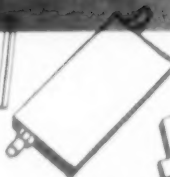
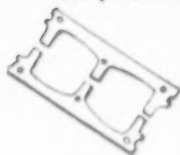
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



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# Genuine BESSER Parts **PRONTO!**

**Typical Besser  
Parts Store**  
showing stocks of  
cores, stripper shoes,  
division plates and  
other Genuine Besser  
Parts . . . available  
for quick delivery.



**BESSER** is the **ONLY** manufacturer of block machinery that maintains parts stores in strategic locations throughout the United States. Enables Vibrapac plants to get Genuine Besser Parts, faster, on a moment's notice. Keeps block production rolling. Cuts plant "downtime" to a minimum. So be sure to order Genuine Besser Parts from the Besser factory or parts store nearest you. The savings in dollars on a single day's production will pay for the parts.

## **BESSER Company**

BOX 135, ALPENA, MICHIGAN, U. S. A.

*Complete Equipment for Concrete Block Plants*

### **BESSER PARTS STORES**

**ATLANTA**  
901 Sycamore  
Decatur, Georgia  
Phone:  
DRake 3-5781

**BUFFALO**  
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Buffalo, New York  
Phone:  
MOhawk 3990 & 6019

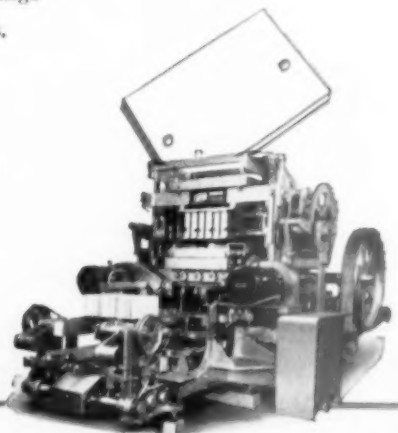
**ALPENA**  
Besser Factory Store  
Alpena, Michigan  
Phone: 291

**LOS ANGELES**  
6100 Sepulveda Blvd.  
Van Nuys, California  
Phone:  
State 5-5457

**NEWARK**  
140 Delancy Street  
Newark, New Jersey  
Phone:  
Mitchell 2-1434



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A 7-119-IPC

## A.C.I. MEETING

(Continued from page 235)

umns, ties, arches, shells and trusses are given very brief treatment or none at all. Almost all of the recommendations apply equally to both building and bridges. In the few instances where this is not the case, the two types are dealt with separately.

It is believed likely that the joint committee may take final action on the report sometime in July. In this event the final recommendations might be published in the A.C.I. Journal sometime late this year.

Prestressed concrete was also the focal point of interest in a technical paper that dealt with some unusual structural problems in the design of a cleaning and painting hangar at Hill Air Force Base, Ogden, Utah. To eliminate high and costly scaffolding, a fully precast roof system was developed, with prestressed concrete girders and roof panels precast at ground level on the construction site. After being prestressed with 65 percent of their total prestressing force, the girders were lifted into place on the cast-in-place columns. When the precast roof panels had been erected, the remain-

ing 35 percent of the prestressing force was applied. The 130-ft. clear-span girders weighed 84 tons each.

Another paper of interest to concrete products men dealt with the much-discussed subject of leaching action of water on concrete pipe. The authors reported on their studies of five selected samples of concrete, representing various types and ages of pipe as well as exposure to waters having several degrees of aggressiveness.

They found that the cementitious structure of all test specimens was sound and appeared to be well bonded to the aggregate. None of the samples showed any serious removal of lime, except for a very thin (about 0.03 in.) inside layer.

Some interesting properties of high-pressure-steam-cured lightweight concrete were discussed in a paper presented by Rudolph C. Valore, Jr., of Texas Industries, Inc. Hollow block, plastic structural concretes, and foamed cellular concretes were steam cured in cycles including 6 hr. at constant pressure (145 p.s.i.) and temperature (355 deg. F.). Binders consisted of portland cement, lime and blends of cement and lime, used with minus 200-mesh silica flour in amounts ranging from zero to 150 percent by weight

of the cementitious ingredient. Aggregates were mainly expanded shales and clays produced in rotary kilns. Expanded perlite was used for some of the foam concretes.

Mr. Valore's tests showed that the compressive strengths of mixes containing silica were usually higher than mixes without silica, with the greatest advantage for mixes with the highest ratios of binder to fine aggregate. The silica mixes 24 hr. after autoclave curing were in all cases as strong as, or stronger than, the 28-day strengths after normal curing of mixes without silica but with comparable binder content. The high-pressure-steam-cured concrete generally showed substantially less shrinkage than the same concrete cured at ordinary temperatures.

Two presentations at Dallas had to do with hot weather concreting problems. Stanton Walker, chairman of A.C.I. Committee 603, discussed the subject matter which that committee proposes to include in a recommended practice now being drafted, and Paul Klieger, Portland Cement Association, reported on the results of some laboratory tests of air-entrained concretes mixed, placed and cured at different temperatures.

END

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New Reo F-506M guarantees it!**

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GOLD COMET GAS ENGINE OR 160 hp LPG  
BACKED BY REO'S OWN 100,000 MILE  
OR 1-YEAR ENGINE WARRANTY!**



**14,000 LBS.**

The certified chassis weight of Reo's new F-506M is 11,240 lbs. The official weighmaster's receipt proves how it can haul 6½ yds. of concrete and stay well within legal limits. The new Reo F-506M is designed and built specifically for mixer use. Its increased payload is made possible by Reo's new high-strength, low-weight *double-side-rail frame construction*.

The new Reo F-506M actually hauls up to 2 yards more than the average mixer chassis. And it places as much as 6,000 pounds more on the front axle than other conventional mixer trucks.

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The new F-506M is powered by Reo's own 170 hp short-stroke, wet-sleeve Gold Comet Engine. Plenty of power for both truck and mixer. And, it's backed by

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For states that permit greater axle loadings than 32,000 lbs., Reo builds the F-536M—52,000 lbs. G.V.W.

Additional hundreds of pounds can be added to the carrying capacity of the new Reo F-506M with Reo's optional front-end power take-off. The PTO also eliminates extra fuel and maintenance costs of the mixer's auxiliary power unit.

Call your Reo branch or distributor today and get the facts on the Reo that's right for you. Mail the coupon for full information.

# 32,000 lb. TANDEM LIMIT



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New Reo Sales Engineering Bulletin to aid you in selecting the proper mixer and chassis combination for your operation. Bulletin lists basic specifications on every current model mixer.



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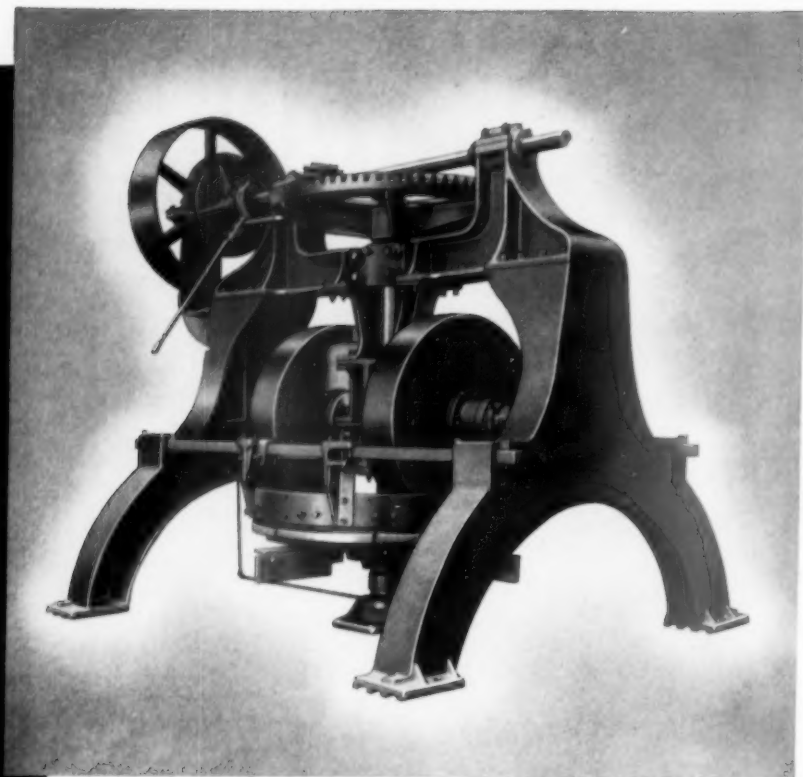
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CONCRETE PRODUCTS, April, 1957  
 A Section of ROCK PRODUCTS

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GRINDER

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Aggregate  
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The No. 9 is one of a complete line of eight grinders ranging in capacity from 15 to 80 tons per hour. You owe it to yourself to get all the facts on American grinders before you buy. For a profitable consultation without obligation . . .

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CLAY MACHINERY • GRINDERS • ROAD ROLLERS • MOTOR GRADERS • MAINTAINERS

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## Colombian Officials Show Interest in Block Machine



President of the Republic of Colombia, General Gustavo Rojas Pinilla, third from right, and Mrs. Rojas, with military aides, viewing a miniature block machine, at left

THE RECENT INTERNATIONAL FAIR which took place in Bogota, Colombia, provided evidence of the increasing interest in South America of concrete block production methods. Colombian officials showed particular interest in

the block exhibit arranged by Arturo Samudio, Besser Co. representative. A miniature Vibrapac machine was displayed with block supplied by Decora-block, Ltd., and Imperblock, Bogota.

## Kansas Group Organizes

KANSAS READY MIXED CONCRETE ASSOCIATION has been granted a charter, board members and directors have been elected, and a constitution and bylaws have been drawn up.

Officers and directors are Vic Baum, Great Bend, president; Walt Keeler, Wichita, C. M. Rhoads, Newton, and O. W. Kershaw, Manhattan, vice-presidents; Mrs. V. E. Baum, secretary-treasurer; Ed O'dell, Dodge City, John Coleman, Iola, Forrest E. Howell, Parsons, Merle M. Penny, Lawrence, Ralph Hunter, Hays, and Carl Engstrom, Salina, directors. First honorary member elected to the association was Charles H. Scholer, past president of American Concrete Institute and recently retired head of Department of Applied Mechanics, Kansas State University.

## Combining Truck, Mixer

NATIONAL READY MIXED CONCRETE ASSOCIATION, Washington, D. C., has published "Selecting the Best Combination of Truck Mixer and Truck for Optimum Efficiency." It was prepared by the Joint Committee of Truck Manufacturers and Truck Mixer Manufacturers Bureau.

## NEW GOVERNMENT RELEASE!

**UNUSED**  
CAB-OVER-ENGINE  
GMC 6x6 ARMY TRUCKS



- Unused and Guaranteed!
- Factory-New Performance!
- Two Cost Less Than One!
- Delivered on Approval!

TWO of our Unused and Guaranteed 6x6 Cab-Over-Engine GMC's cost LESS than ONE new truck... give GUARANTEED NEW PERFORMANCE!

Special cab-over-engine design with extra frame length means increased load capacity. BIG SAVINGS TO YOU!

Tandem axle with front wheel drive available with 17' all-steel bed, wooden side boards. DELIVERED ON APPROVAL!

For specifications, prices, delivery. Write, wire or phone collect Jackson 5-7841  
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CONSTRUCTION AND AUTOMOTIVE  
EQUIPMENT AND PARTS  
788 S. THIRD ST.  
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## INDUSTRY NEWS

(Continued from page 221)

### Firm Changes Name

STANDARD CONCRETE MIX CO., South Sioux City, Iowa, has purchased Ready Mix Concrete Co., Sioux City. In announcing the acquisition, Ray Burke, president, said that the firm has changed its name to Standard Ready Mix Concrete Co.

Capacity of the two plants will be 2000 cu. yd. of ready-mixed concrete per day. The firm's fleet of 26 radio-dispatched mixer trucks serves an area within a 25-mile radius of Sioux City.

## CONCRETE PRODUCTS Awards Radios at Exposition

CONCRETE PRODUCTS presented RCA transistor radios to visitors to the Concrete Industries Exposition, held in conjunction with the convention of National Concrete Masonry Association in St. Louis, Mo.

In drawings held daily, one radio was given away on each of the four days of the exposition. The four winners are: R. D. Wilson, Chester Concrete & Dist. Co., Chester, S.C.; Robert A. Jamieson, Irions' Concrete Block Co., Peoria, Ill.; Mrs. T. C. Rash, Concrete Machinery Co., Inc.,

Hickory, N.C.; and Paul E. Bohm, Jr., Concrete Products Corp., Mishawaka, Ind.



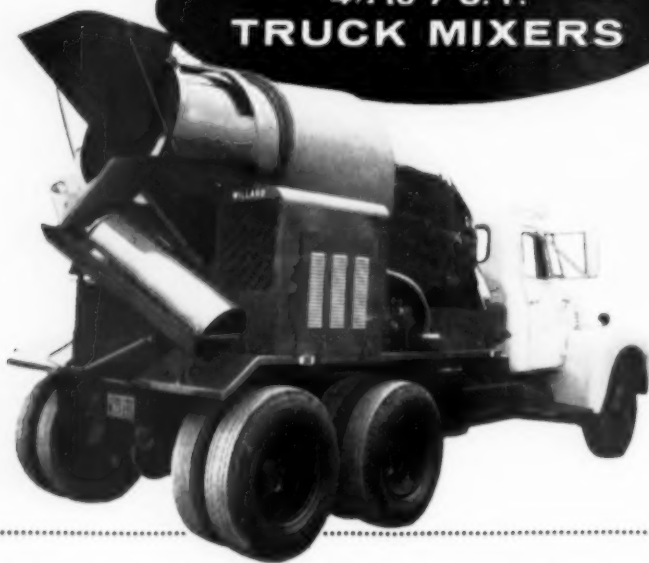
Presentation of transistor radio to R. D. Wilson, first day's winner, by Philip D. Allen, publisher, CONCRETE PRODUCTS



Drawing for the radio, Mrs. Lillyan Behlke, St. Louis Convention Bureau, is assisted by Harold Dunlop, CONCRETE PRODUCTS representative

**Better Customer Service**  
**Designed for... Better Mixed Concrete**  
**Better Operation**

**Willard**  
**4½ to 7 C. Y.**  
**TRUCK MIXERS**



Willard has the time and field-tested designs that successful ready-mix concrete operators look for when they buy transit mixers. Check these outstanding features such as drum brake and fluid drive...short wheelbase mounting...ratchet or hydraulic chute...3 way quick shut-off water valve...shift lever and combination throttle, clutch and drum brake lever at rear and front of mixer...low center of gravity and the specially designed fins that assure uniform mix and smooth discharge.

All these features help you service and satisfy your customers needs faster and more efficiently.



Member: T.M.M.B.

Write today for detailed information and prices. Dealers everywhere.  
Manufactured in Los Angeles, California and Galion, Ohio.

**Willard Concrete Machinery Company**

11700 Wright Road, Lynwood (Los Angeles County) California.

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### Schedules Fifth Plant

BEST BLOCK CO., Edison, N.J., has announced tentative plans for construction of a fifth block plant near Red Bank, N.J. Other plants are at Edison, Toms River, Yardville, and Trenton, N.J. Thomas J. Swales is president, James A. Swales, vice-president, and Thomas Swales Sr., sales manager.

### Pipe Firm Relocates

MOZARK CONCRETE PRODUCTS CO., Osceola, Ark., has sold its Osceola plant and will erect a new plant in Springfield, Mo., for the manufacture of concrete culvert, sewer and irrigation pipe. The company also will go into the field of prestressed concrete, according to R. D. Saxon, vice-president of the firm.

## KISSAM OF ORLANDO, FLA.



**How** Makes  
**Highest Quality Block**  
**... Gains New Customers**  
**with their new**

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The Stearns Electromatic installation at Kissam Builders' Supply Company, Orlando, Florida.

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 MANUFACTURING COMPANY • INC.

ADRIAN • MICHIGAN • U.S.A.

COMPLETE CONCRETE PRODUCTS PLANT EQUIPMENT

CONCRETE PRODUCTS, April, 1957  
 A Section of ROCK PRODUCTS

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 BUILDING MATERIALS • KISSAM TILE  
 ORLANDO, FLORIDA

January 23, 1957

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We are glad we bought our Electromatic—

KISSAM BUILDERS' SUPPLY CO.

By: *Kenneth F. Hill*  
 Kenneth F. Hill, President



Shown left to right are Mr. Gus Bonaffino, Supervisor of Maintenance; Mr. Kenneth F. Hill, President; Mr. Roy Palumbo, Secretary; Mr. Oland C. Avery, Block Plant Supervisor.

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HIGHER PRODUCTION, Yes . . . but of greater importance . . . the dependable, constant production of HIGH QUALITY BLOCK from the Stearns Electromatic has won for Kissam many new customers . . . who specify and demand top QUALITY. Electromatic owners from coast to coast, using practically every type of aggregate, are reporting these very same facts . . . unparalleled production, PLUS top QUALITY units.

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NORTH CAROLINA—North Carolina Products Corp., Raleigh, N. C.



CALIFORNIA—Rockwin Prestress Concrete Co., Norwalk, Calif.



PENNSYLVANIA—Schuylkill Products, Inc., Cressona, Pa.



NEW YORK—Frontier Dolomite Concrete Products, Lockport, N. Y.

## Rodgers HYDRAULIC JACKING UNITS

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**RODGERS** Hydraulic Jacking Units used singly or in multiples of two, four or more provide "controlled pretensioning and detensioning" of steel strands.

Regardless of size or type of bed design—whether the jacking carriage is of rods with locking nuts or guided structural steel abutments with locking screws—Rodgers Jacks assure smooth, positive action. Accurate control of pump and jacks provides uniform pretensioning and detensioning to conform with exacting state and municipal specifications.

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CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS



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on Prestressing Jacks and Pumps  
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The Cleveland Builders Supply Co., Cleveland—3 units  
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The Zone Coal and Supply Company, Cleveland—2 units  
Concrete Masonry Corp., Elyria—6 units  
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Lima Cement Products, Inc., Lima  
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MARACONS are admixtures for concrete that provide new and exceptional benefits so keenly desired . . . so urgently required . . . to meet existing needs of the concrete industry. MARACONS promote more complete hydration of cement particles . . . permit a substantial reduction in the unit water content without loss of plasticity or consistency of the mix. This means —

**A. Lower Concrete Costs: —**

1. Reduce cement required in a standard mix to give specified strengths.
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3. Maintain slump and workability at low W/C ratios.

**B. More Durable Concrete: —**

1. Minimize volume change in concrete before hardening, due to lower water content and more complete hydration of cement.
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The MARACONS also reduce water requirements in concrete mixes containing pozzolanic materials.

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BETTER!  
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FASTER!**

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## PRESTO BLOCK

Now you can build with true air-cavity construction featuring every wanted quality of fire protection, long life, superior sound, temperature and moisture insulation... all in one easy-to-lay-up, self-aligning concrete building unit!

### LOW COST AUTOMATIC PRODUCTION!

of either 8 or 12 in. high Presto Blocks on electronically controlled, hydraulically operated Presto Block Machines!

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PIGMENTS

Established 1854  
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and Company, Inc.  
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PLANTS:  
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**SAVE FUEL • REDUCE CURING TIME  
CUT COSTS • UP PROFITS**  
with **Standard KILN DOORS!**



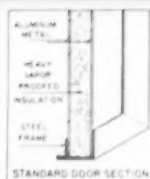
WHERE HINGE-TYPE DOORS ARE PREFERRED Choose from two STANDARD hinge-type doors. The top-hinging door (shown) can be used when there's insufficient room at sides of door. The conventional side-hinging door has rugged hinges and positive-seal lock.

WHERE AISLE SPACE IS LIMITED STANDARD sliding doors need no aisle space. The carrier-type door (shown) requires 15" minimum clearance above top of door opening. A vertical sliding door, counterweighted for easy opening, is also available.



### CHECK THESE FEATURES

- ✓ Heavy Aluminum Sheets on Both Sides of Thick Vapor Proofed Insulation.
- ✓ Rugged Steel Frame.



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**STANDARD DRY KILN COMPANY**  
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**AIR POWERED CUTTERS**  
SPEED UP PRODUCTION  
Reduce cutting costs 50%.  
Cut Pipe Mesh, Reinforcement Bars, Rods & Bolts.  
High Speed, Light Weight, Portable.  
5/16" to 9/16" Head Capacity.  
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AMERICA'S FINEST MOLDS AND LOWERING DEVICES



TERRITORY FRANCHISES  
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EQUIPMENT DIVISION  
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THE  
RECOGNIZED AUTHORITY  
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NON-METALLIC  
MINERALS INDUSTRY

FOR GREATER PROFITS—BUILD APPROVED

CONCRETE SEPTIC TANKS with

## NORWALK EQUIPMENT

Build rectangular concrete septic tanks that will meet the most rigid specifications of local health officers and sanitary engineers. Build them QUICKER and at LOWER COST with NORWALK septic tank molds.

Molds built to  
your requirements

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### WORLDS BEST Stripping Splash Block Molds 2½"x11½"x36"



F. H. A. Approved  
Mold Made out of  
deep drawn 16 gauge  
steel \$16.00 each  
in lots of 10 or more  
\$12.95 F.O.B.

Send  
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on many  
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Profit Low  
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- The Standard of Comparison for Nearly Forty Years
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FMC-180, plain pallet block machine, guaranteed. Comes complete with motors, and mold box. Capacity 1400 blocks daily. \$2750.00. Financing available.

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made by

BLUE RIDGE TALC CO., INC.  
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650 Pieces of 18½" x 18½" x 1½" clean steel pallets.

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Phone: Main 3700

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Reasonable Price

Machined Cast Iron Base Rings and Top Rings for Tylox Rubber Joint Pipe, Sizes 42" and 60". Rings practically new and in A-1 condition.

BOX 0-98, CONCRETE PRODUCTS  
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Three (3) reconditioned Stearns 18 cu. ft. Mixers, stationary type, without power. Price reasonable.

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With Rocks and Pallets for making

3500 4"  
3000 8"  
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Machine in excellent operating condition.

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One mold makes four sizes, no Royalty or franchise, Special discount for 20 days only

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2—2 Yd. Joeger Hi Dump  
1—3 Yd. Joeger Hi Dump  
Mounted or Unmounted

BYERS CRANE

½ Yd. Model 60

JENKINS CONCRETE

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Stearns #7 & 9 Joltcrates \$500.00 each  
(Joltcrates owners at this price buy one for spare parts.)

Mold Boxes #7 & 9 \$150.00 each

2—Stearns 12 cu. ft. mixers. Excellent condition \$450.00 each

1—Y-40 Truckman Fork-Lift 4000 lbs. capacity \$3500.00

1—25 cu. yd. Single Bin Hopper \$1500.00

2—Air Offbearers Stearns #7 & 9 \$250.00 each

2—Hand Lift Trucks \$175.00 each

2—Stearns Stripper Clipper Machines \$350.00 each

1—Hyster 40 Lift Truck 4000 lb. capacity. Like new \$1950.00

100—Rocks for cored steel pallets \$10.00 each

100,000 pressed steel pallets in stock

(Send tracing or sample for quotation.)

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Mr. McCaughey

Send in list of equipment you need. If we don't have it in stock, we usually know where we can find it at a bargain.

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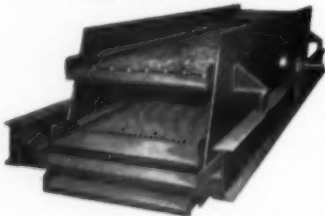
Route 138 Thornapple, N.J.

Phone Tilden 5-5400

# BONDED EQUIPMENT BARGAINS

IMMEDIATE SHIPMENT FROM OUR FACTORY—WRITE, WIRE OR PHONE

## NEW BONDED® HEAVY DUTY VIBRATING SCREENS



HEAVY DUTY MODELS, TYPE BS: Four bearing positive throw eccentric shafts: 3' x 6' to 5' x 14', 1 to 6 decks. Write for New 8-page Bulletin No. 1087.

Model Number	Screening Area	No. of Decks	Sale Price
124AS	2' x 4'	1	\$ 443
224AS	2' x 4'	2	472
126AS	2' x 6'	1	472
226AS	2' x 6'	2	501
186AS	3' x 6'	1	581
286AS	3' x 6'	2	608
386AS	3' x 6'	3	956
188AS	3' x 8'	1	675
288AS	3' x 8'	2	815
388AS	3' x 8'	3	996
336BS	3' x 6'	3	1303
436BS	3' x 6'	4	1447
188BS	3' x 8'	1	1231
288BS	3' x 8'	2	1282
388BS	3' x 8'	3	1375
248BS	4' x 8'	2	1865
348BS	4' x 8'	3	2035
2410BS	4' x 10'	2	1953
3410BS	4' x 10'	3	2305
2412BS	4' x 12'	2	2319
3412BS	4' x 12'	3	2635
4412BS	4' x 12'	4	2833

## NEW BONDED® GENERAL DUTY VIBRATING SCREENS



GENERAL DUTY SCREENS, TYPE AS: Eccentric weight mechanism, spring mounted, 1 to 3 decks, 2' x 4' to 3' x 8'. Write for New 8-page Bulletin No. 1086.

For mineral, chemical and other industrial products. Fast, efficient and economical for cleaning, sizing, grading, dewatering. Made in all metals including stainless steel. Enclosed models for hot materials or dust control. Bonded screens are built for any screening operation wet or dry.

## NEW BONDED® TROUGHING IDLER CONVEYOR BARGAINS

Complete Ready-Fab sections quickly and easily joined together on the job. We take our loss on our stock of short length belting. You can save as much as 50% on the BONDED CONVEYOR SPECIALS listed, with conveyor belting in two pieces. Conveyors are equipped with 5" roll diam. idlers and return rolls, 20" diam. head pulley and 18" diam. tail pulley mounted on 2 1/2" or 3 1/2" diam. shaft. Belt is new 4-ply, 28-oz. duck, 1/4" top rubber cover x 1/4" bottom cover and is fresh stock made by leading manufacturers.

Remember,  
You Have  
Up To  
50%



CONVEYOR PRICES  
INCLUDE BELTING

Belt Width	Length of Conveyor	List Price	Sale Price
14"	25'	\$1397	\$ 723
14"	50'	2322	1144
14"	85'	3277	1738
16"	20'	1262	434
16"	45'	2137	1088
16"	60'	2662	1359
16"	90'	3712	1999
18"	25'	1477	794
18"	45'	3317	1166
18"	70'	5142	1648
18"	85'	3697	1932
18"	100'	4353	2326
18"	130'	5363	2797
20"	25'	1517	828
20"	60'	3882	1533
20"	75'	3467	1838
20"	90'	4952	2145
24"	25'	1536	898
24"	45'	3439	1339
24"	70'	3480	1875
24"	100'	4740	2514
24"	120'	5580	2950
24"	150'	6840	3663
30"	50'	3911	1617
30"	70'	3871	2119
30"	90'	4931	2614
36"	25'	1818	1118
36"	45'	2858	1673
36"	60'	3638	2096
36"	100'	5718	3214

For conveyors longer or shorter than those listed above, add or deduct the following per foot prices according to belt width. Prices include belting. Write For Bull. # 1188.

For 14" belt	.....\$16.84 per foot
For 16" belt	.....18.94 per foot
For 18" belt	.....19.34 per foot
For 20" belt	.....21.37 per foot
For 24" belt	.....21.78 per foot
For 30" belt	.....24.75 per foot
For 36" belt	.....27.95 per foot

Bonded troughing idler conveyors are also available with truss type construction. Write for descriptive information and prices.

## NEW CONVEYOR BELTING SAVE UP TO 25%

Heavy duty 4-ply, 28 oz. duck 1/4" top rubber cover by 1/4" bottom cover 12 1/2" to 15 1/2" average friction pull; 800# to 1000# average cover tensile rubber belting having high tensile strength, tough cotton duck, strong carcass and proper flexibility. For heavy boxes, bags and bulk materials. Troughs easily. Famous brands at deep cut prices. Fresh stock.



Width	Ply	List Price	Sale Price
14"	4	\$3.52 foot	\$2.83 foot
14"	4	3.96 foot	2.97 foot
18"	4	4.38 foot	3.29 foot
20"	4	4.83 foot	3.80 foot
24"	4	5.68 foot	4.26 foot
30"	4	6.97 foot	5.21 foot
36"	4	8.26 foot	6.18 foot

A high grade of heavy duty 4 and 6-ply, 28 oz. duck, 1/4" top rubber cover x 1/4" bottom rubber cover, 16 1/2" to 19 1/2" average friction pull, 2500# to 3000# average cover tensile belting. For more severe service, high tonnages and abrasion resistant. For handling stone, mineral ores, concrete, cement, coal and other similar materials, both wet and dry. Belt has molded rubber edge.

Width	Ply	List Price	Sale Price
16"	4	\$4.71 foot	\$3.46 foot
18"	4	5.23 foot	3.83 foot
20"	4	5.73 foot	4.37 foot
24"	4	6.74 foot	4.94 foot
30"	4	8.28 foot	6.87 foot
24"	5	7.90 foot	5.78 foot

The following belts are 6-ply, 32 oz. duck:

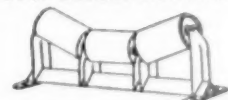
Width	Top Cover	Bottom Cover	List Price	Sale Price
24"	1/4"	1/4"	\$ 8.56 Ft.	\$ 6.42 Ft.
30"	1/4"	1/4"	10.52 Ft.	7.89 Ft.
36"	1/4"	1/4"	14.21 Ft.	10.66 Ft.

A heavier duty 28 oz. duck belt with 1/4" top rubber cover x 1/4" bottom rubber cover belt having 3500# to 4000# average cover tensile, 20# to 24 1/2" average friction pull. For the higher abrasion resistance applications and handling of materials where more strength is required to give greater belt life.

Width	Ply	List Price	Sale Price
18"	4	\$5.67 foot	\$4.26 foot
20"	4	6.22 foot	4.61 foot
24"	4	7.32 foot	5.41 foot
24"	5	8.53 foot	6.31 foot

Other widths, plys, duck weights and cover thicknesses. Available at low prices. Write for Free Sample.

## NEW IDLERS AND RETURN ROLLS 25% BELOW LIST PRICE



3-roll, 6" diameter Troughing Idlers for:

14" belt	\$18.50	24" belt	\$21.25
16" belt	19.25	30" belt	22.00
18" belt	26.50	36" belt	23.75
20" belt	29.75	48" belt	25.50

1-roll, 5" diameter Return Idlers for:

14" belt	\$7.25	24" belt	\$ 8.50
16" belt	7.50	30" belt	9.50
18" belt	8.00	36" belt	10.00
20" belt	8.25	48" belt	11.50

All steel. Interchangeable with other well-known makes. Furnished with easily replaceable pre-lubricated sealed ball bearings. Also can be furnished with greaseable type Alemite Fitted bearings at slight additional cost. Maintenance is negligible. Bonded Rubber Disc Impact Idlers priced from \$61.00. Write For Bulletin #1188.

## NEW BONDED® FEEDERS



Bonded HDF-18 Heavy Duty Feeders were especially designed for abrasive materials such as Ore, Rock, Crushed Stone, Gravel, Sand, Clinkers, Abrasive Volcanic Ash and Rock. Abrasion Resistant Alloy Steel Plate is used for all parts that contact the material. Feeders are process control instruments as well as material movers and help to prevent screens, crushers, grinders, etc., from being run empty, choked feed, or overloaded. Capacities to 250 TPH. Write for Bulletin #1182. Priced from \$595.00

## NEW BONDED BUCKET ELEVATORS

Bonded makes Open or Enclosed, Vertical or Inclined Bucket Elevators with continuous or spaced buckets mounted on chain or belting. They are recommended for small to medium size lumps, fine abrasive material such as dry sand, coke breeze, wet slag and many other bulk materials. Because of the wide variety of sizes and types, prices will be quoted on request. Write for Bulletin #1047.

## BONDED SCALE AND MACHINE COMPANY

PHONE: Hickory 4-2186, Days  
2175 S. Third St.

WRITE FOR FREE CATALOG & PRICES

Mfrs. of Scales, Conveyors, Conveyor Parts, Idlers, Vibrating Screens, Crushers and Feeders

PHONE: AX. 1-2213, HU 6-3156, Evenings  
COLUMBUS 7, OHIO

## NEW SEPTIC TANKS

### Steel Forms

Makes One Piece Tank

536 Gal.—3 x 6 x 5

750 Gal.—3½ x 7 x 5

(TWO FORMS IN ONE)

EASY CHANGE OVER • FAST STRIPPING

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1 Besser Vibrapac complete with magnetic off-bearer and pallet return.

1,000 Plain Pallets 18½ x 26 x 5/16

4", 12", 8", Mold Boxes

50 Steel Racks. 72 Block capacity

1 Hyster Fork truck 4,000 lbs. capacity.

1 Yale electric platform truck with charger, 4,000 capacity.

1 Scoopmobile front end loader 1 yd. capacity.

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Your contractor and bricklayer customers will be able to do quicker, easier, straighter work with UB Tools . . . tools that carry **YOUR OWN COMPANY ADVERTISING.** Linestretchers, Corner Ties, Line Pins, Twigs, Concrete Calculators. We also wholesale a complete line of Blocklayers' Tools. Write for literature and prices.

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GUARANTEED QUALITY

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**WITTEMAN MACHINERY COMPANY**

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Specialists in Concrete Products Equipment

Eastern Representatives of the

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Elevators  
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Feeders  
Mixers

### PLAIN STEEL PALLET

made accurately

to

your specifications

**THE REGENT STEEL CO.**

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One new Anthony, 28 cubic ft., Continuous Mixer. Still in original crate. \$1600.00. Guaranteed.

**FLEMING MANUFACTURING CO.**

Cuba, Missouri

### FOR SALE

ONE STEARNS No. 15 BLOCK MACHINE COMPLETE WITH TWO MOULDS. CAN BE SEEN IN OPERATION.

**BOX P-20, CONCRETE PRODUCTS**  
79 W. Monroe St. Chicago 3, Ill.

Concrete mold manufacturing business with Farm Specialties manufacture as a sideline. Consists of finished products, supplies, literature and equipment including: 20 ton press, 10" 14 ga. steel shear, Metal brake, thread roller, etc. Sales nationwide.

**BOX P-13, CONCRETE PRODUCTS**

79 W. Monroe St., Chicago 3, Ill.

### FOR SALE

1—model 8, 12" high, Columbia Block Machine (will use either 18x18 or 18x20x¼ steel plain pallets.)

1—50 ft. Besser Mixer in excellent Condition. Magnetic offbearer, pallet return and oiler and cleaner

1600 18x18x¼ Steel pallets.

58 Racks.

Molds for 2", 4", 6", 8", 10", & 12" blocks.

18" Stearns skip, Mixer.

1 Truckman lift truck.

This machine was installed Feb. 20, 1955 and can be inspected any week day until approximately April 10, when it will be replaced with a Columbia Model 12, 3 Block machine.

**Carter's Concrete Block Plant**

RFD #6, Monticello, Indiana

### WANTED TO RENT

2 or 3 transit mixers—mounted. Capacity: 4½—6½ cu. yds. Prefer tandems—must be in good condition. Rental Period: 2—6 months. Consider lease with option to purchase.

Write, wire or call—

**HERB RUSK, PRESIDENT**

**READY MIXED CONCRETE, INC.**

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### OWNER RETIRING Exceptionally Good Buy

Septic Tank, Vault Business, Block Plant. Well established, Reputable year around business. In one of the fastest growing cities in the South-west.

**BOX P-18, CONCRETE PRODUCTS**

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Dunn Brick Machine in good condition for \$1000.00.

1200—12" Steel Pallets 50/00 Air space .70¢ each.

**Wakefield Concrete Block Co.**

101 Foundry St., Wakefield, Mass.

### WANTED

Man between 28 and 40 years of age to operate manufacturing phase of successful concrete products plant in the midwest. Must be able to supervise up to 30 men as well as have intimate knowledge of concrete mix designing, machinery, curing techniques, boilers, gas and electric welding. Also must be capable and willing to carry out a planned preventive maintenance program. Some college training desirable. Excellent wage opportunities for man willing to work long hours during peak periods. Reply giving full particulars and desired wage. Interview expenses will be reimbursed.

**BOX P-8, CONCRETE PRODUCTS**

79 W. Monroe St., Chicago 3, Ill.

### WANTED

Superintendent, Concrete Products and Ready Mix Plant. Must know all phases of manufacturing and maintenance. Excellent opportunity for go-getter. Complete resume in first reply. Confidential.

**BOX 9-96, CONCRETE PRODUCTS**

79 W. Monroe St., Chicago 3, Ill.

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For Quick Results

### WANTED

REVOLVING PALLET CLEANING BRUSH FOR BESSER VIBRA-PAC. STATE PRICE AND CONDITION.

**Standard Concrete Products Co.**

700 N. Sherman St., York, Penn.

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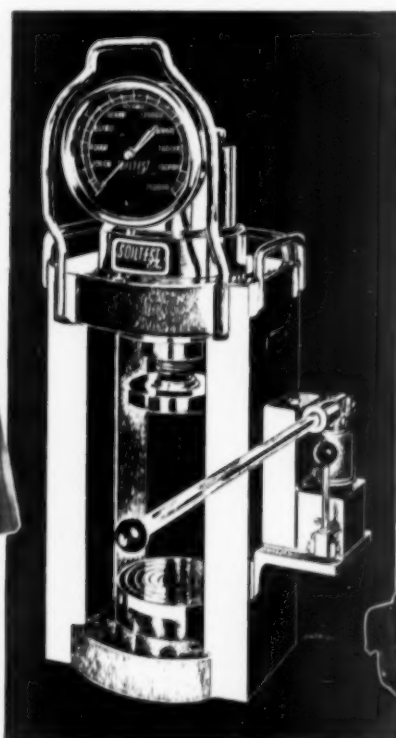
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CONCRETE PRODUCTS, April, 1957  
A Section of ROCK PRODUCTS

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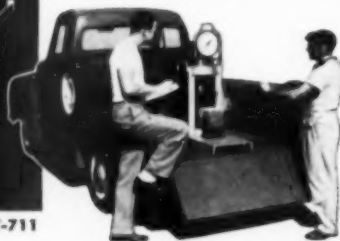
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**COMPLETE QUALITY CONTROL** of  
your concrete products is  
quick, easy and economical  
with the **NEW**

### CT-711 CONCRETE TESTER

This flexible, self-contained unit is ideal for PLANT or JOB-SITE use. Easily installed attachments provide for rapid conversion from CYLINDER to BLOCK, BEAM or CUBE TESTING. An electrical pump attachment is available for power operation. The CT-711 is calibrated for accuracy to within 1% of the indicated load.

Gauges available in Metric System.  
Capacities to 200,000 pounds.



Keep

YEARS AHEAD TOMORROW

WITH  
ANY



GOCORP "SUPER" TRUSTEE

Hydraulic

# GOCORP "TRUSTEE"

NO DRAWING BOARD DREAM BUT THOROUGHLY FIELD TESTED—THE BIG, HEAVY DUTY, 3 at a time, PLAIN ALLET, "SUPER" TRUSTEE IS READY TO GO TO WORK OR YOU NOW!

## CONSIDER THESE FACTS!!!

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- **TOP QUALITY BLOCKS**—Fewer culls in production • Fewer rejects on the job • Variable cycle—for complete flexibility and constant control of quality • Accurate height control.
- **LOWER MAINTENANCE**—Hydraulic operation means fewer wearing parts • Smoother operation • The elimination of cams, cam followers and gears means big maintenance savings for you.

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- **RUGGED CONSTRUCTION**—Heavy duty frame with heavy plate cross bracing — Heavy duty bearings — 5" dia. cross shafts • The "Trustee" is built to last.
- **NO BRAKE FAILURE**—"Trustee" vibrator motors are 10 HP plug reversing type • Designed for frequent stops and starts • No brakes to cause trouble.

Both the "SUPER" TRUSTEE and the new economy model, TRUSTEE "SPECIAL" (also a 3 at a time), will accommodate, without alteration, molds of the majority of plain pallet machines now in use. You can have all the advantages of the modern hydraulic TRUSTEES and protect your mold investment too!

AND THAT'S NOT ALL - Ask about these other fast selling hydraulic TRUSTEE models:

TRUSTEE "SPECIAL" ..... 3 at a time economy model  
TRUSTEE 2½X ..... up to two 10 x 8 x 16" units per cycle and other combinations  
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# CHALLENGE "ETO"★ *Pacemaker*



#### OUTSTANDING PERFORMANCE

1 drum speeds provide the right speed whether charging, mixing or agitating.

**Today's ONLY  
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Take-Off  
Mixer!**

**ONE ENGINE OPERATES  
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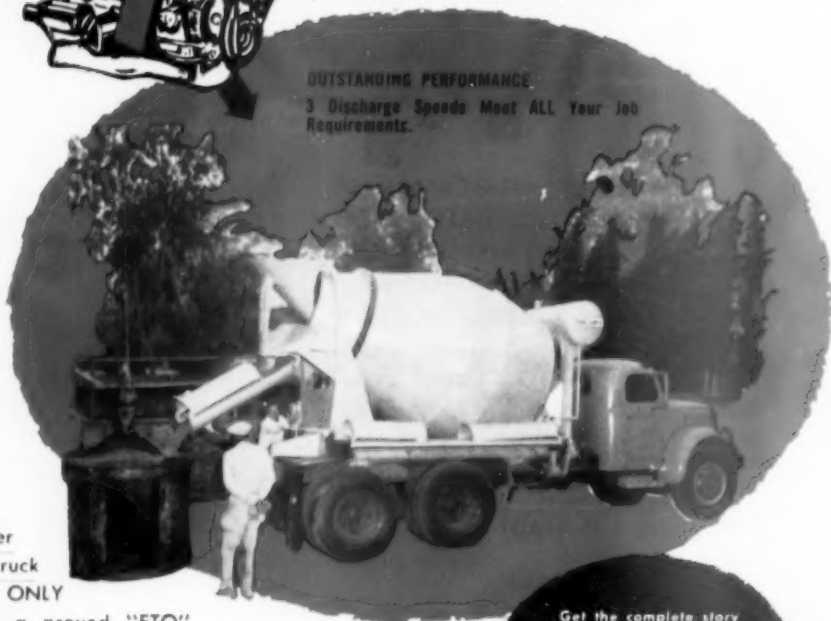
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The Challenge "ETO" was put into production more than 6 years ago . . . the FIRST mixer driven from the front of the truck engine in the field! Today ONLY

Challenge offers the industry a proved "ETO" mixer . . . extremely simple in design . . . no twisting drive lines . . . no complicated parts or other mechanism.

ONE SOURCE RESPONSIBILITY . . . nothing extra to buy.  
Prompt deliveries from Los Angeles, California and Bryan, Ohio.



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3 Discharge Speeds Meet ALL Your Job Requirements.

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"ETO" Pacemaker  
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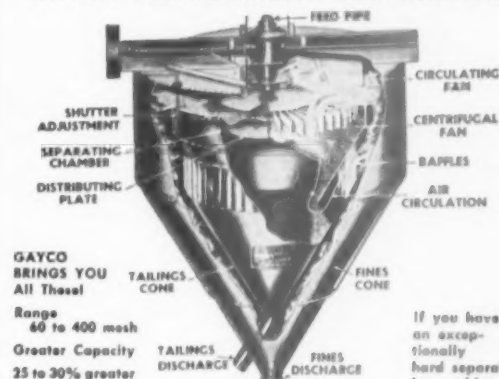
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Buy WILFLEY  
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### For Handling Abrasive, Fine Mesh Solids at Minimum Cost!

- NO PERIODIC ADJUSTMENTS
- ONLY THREE WEARING PARTS
- NON-CLOGGING IMPELLER
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### Lightning RUBBER LINED PUMPS OUTLAST METAL LININGS 5 TO 10 TIMES!

Ideal for handling silica sand, glass sand, coal silt, remnants from classifiers or any other abrasive slurry. The simple design of the pump and its long wearing construction assure long, trouble-free service life, high operating efficiency and a minimum of care. Available in 6" x 8" and 4" x 6" sizes.

A new bulletin completely describing this pump is available . . . write

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5480 Marion Electric 15 yard Shovel  
1600 P&H Electric 6 yard Shovel  
2400 Lima 6 yard Standard Shovel  
4500 Manitowoc 4 yard H. L. Shovel  
111-M Marion 3 yard H. L. Shovel  
1201 Lima 2 1/2 yard H. L. Shovel  
3500 Manitowoc 2 yard H. L. Shovel  
Unit 1020 3/4 yd. Shovel-1 yr. old  
625 Page Diesel Drag, 160', 9 yd.  
6160 Monighan Drag, 160', 8 yd.  
625 Page Diesel Drag, 150', 10 yd.  
4500 Manitowoc Drag, 140', 4 1/2 yd.  
621-S Page Diesel Drag, 135', 6 yd.  
7200 Marion Diesel Drag, 135', 5 3/4 yd.  
621-S Page Diesel Drag, 125', 7 1/2 yd.  
200-W Page Diesel Drag, 120', 7 1/2 yd.  
7-W Monighan Elec. Drag, 120', 7 yd.  
618 Page Diesel Drag, 120', 5 yd.  
5-W Bucyrus Monighan Drag, 120', 5 yd.  
2400 Lima Dragline, 110', 6 yard  
111-M Marion Diesel Drag, 80', 5 yd.  
1055 P&H Dragline, 80', 3 1/2 yd.  
1201 Lima Dragline, 85', 3 yard  
955 P&H Dragline, 90', 2 1/2 yard  
3500 Manitowoc 60 ton Crane  
802 Lima Cranes  
4161 Marion Comb. Elec. Drag & Shovel  
100-B Comb. Electric Dragline & Shovel  
1201 Lima Comb. Shovel & Crane  
600 Reich Heavy Truck Mounted Rotary  
Air Drills  
McCarthy Coal Auger Drill  
Mayhew Rotary Truck Mounted Air Drills  
Portadrell Truck Mounted Air Drill  
42-T, 29-T & 27-T Well Drills  
Euclid Trucks—Bottom & Rear Dumps  
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**CRUSHERS**  
3—36" x 48" Buchanan, Jaw, Steel Frame  
1—9" x 36" Cedar Rapids Jaw  
1—28" x 36" Traylor, 75 HP Motors  
3—4" Symons, Standard, 100 HP motors  
**BALL MILLS**  
6—6 x 12 Allis-Chalmers Ball  
12—86 Marcy Type, 225 HP  
2—86 Marcy Type, late model, excellent  
1—6 x 8 Allis Chalmers  
1—8 x 48" Hardinge Conical  
1—5 x 5 Marcy Type  
**FEEDERS**  
2—36" x 72" Jeffrey Traylor, Grizzly Pan  
Complete with controls  
1—54" x 16" Stephens-Adamson, heavy duty  
apron feeder type, excellent complete with  
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1—30" x 10" Link Belt, apron feeder.

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excellent  
1—3' x 8' Denver-Dillon, 2 deck  
1—3' x 6' Symons Rod Deck  
**CRUSHING PLANTS**  
1—25 yd. Iowa Primary, portable, gas engine.  
Bargain

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Cedarapids 2540 Jaw only  
Cedarapids 1036-2416 Junior tandem. Rebuilt.  
Cedarapids single pass plant with 1024 Jaw.  
36" x 4'6" Apron Feeder.  
Williams 20" x 33" pulverizer.  
12" x 35" inclined open elevator. New  
Siero 3' x 10' triple deck screen. Reconditioned.  
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27 1/2 ton, single-compartment, 8' x 12' bin.  
60-ton, two-compartment, 8' x 18' storage, bin  
with clam gates.  
100-ton, two-compartment, 13' x 23' bin.  
Special bins to your specifications  
Conveyors—18"—24"—30"—36". Also conveyor  
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18" diameter x 30" face magnetic pulley.

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P & H 855 2-yard diesel powered shovel-drag.  
Northwest 25 3/4-yard diesel powered crane-drag.  
Link Belt L8-85 3/4-yard diesel powered shovel-  
drag.  
Lima 34 Paymaster 3/4-yard diesel shovel. Good  
Unit 1020 3/4-yard diesel powered shovel-crane.  
Lorain TL25-S 3/4-yard gas powered backhoe.  
Lorain L-40 3/4-yard diesel powered clam-crane-  
drag.  
Link Belt L8-50 backhoe, gas power.  
Lorain MC-56-W crane clam. Reconditioned.  
Michigan T6-K Truck Crane 35' boom.

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1—Euclid 18-yard twin engine scraper. Very  
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1—Euclid Model 3 HV loader.  
3—Caterpillar DW-10 scrapers, 600D  
1—Caterpillar DW-10 with Allis side dump.  
1—Allis Chalmers HD-10 tractor with hydraulic  
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Cat. D7700, 74 HP. at 1000 RPM. Rebuilt.  
Cat. D13000, 145 HP. at 1000 RPM. Rebuilt.  
CMC Twin Diesel, rebuilt.  
CMC 3021C, 3-cylinder, new.  
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Barber-Greene 848 Model with drier, gradation  
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105 cu. ft. Ingersoll-Rand gas portable.  
500 cu. ft. Gardner-Denver diesel portable.  
600 cu. ft. Gardner-Denver diesel portable.  
500 cu. ft. Ingersoll-Rand, Waukesha power.  
420 cu. ft. Gardner-Denver two-stage stationary.  
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**ROTARY COOLER:** 104" x 30'; 104" x  
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**WILLIAMS 240 NF HAMMER MILL:** on  
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**PATTERSON BALL TUBE MILL:** 5' x 22',  
200 HP UNUSED.

**AL. CH. 6' x 16' BALL TUBE MILL:** 30 HP.

**JAW CRUSHER:** 8" x 10".

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Hardinge ball mill 5'x36" 100 HP AC motor com-  
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reduction gear; 15 ton balls  
F. S. Smith tube mill 6'x21" Silex brick lined,  
350 HP 180 RPM syn. motor 17 tons Nikard steel  
balls, new discharge hood  
Pennsylvania SXT-13 hammermill 350 HP 900 RPM  
syn. motor, extra new shaft, discs, many spare  
parts. Motor rewound, prac. new condition  
2 W. S. Tyler-Hummer 4'x10' two deck  
Jeffrey vibrating feeders 2 12'x30" 3 18'x30"  
inclined skip hoist 95' centers, 70' high, bucket  
120 cu. ft. 40 HP elec. AC motor  
Two bucket elevators 58' high 14'x8'x8 1/4" buckets  
inclined bucket stone elevator 150' long 14'x8'x8 1/4"  
buckets; 24'x76 1/2" steel housing  
3 Williams Mdl. 278 hammermill V-belt drive.

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Northwest 8, 1 1/4 yd., dragline-crane, 95' boom.  
H-K 22H 3/4 yd. Shovel-Crane-Backhoe-Drag.  
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Bay City 100761 truck crane 25 tons cap. Diesel.  
Link-Belt HC300 truck crane 25 tons 90' alloy boom.

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Jaw: Acme 10x20, 10x30, 14x20, 14x28, 10x42,  
10x52, 18x32, 25x40 Eagle 10x16, 20x36 Diamond  
24x36 Cedar Rapids 10x30, 15x36, 20x36, 25x40,  
Farrell 10x20, 18x30, 14x36, 18x36, 30x48, Buc-  
hanan Type C 30x42, 36x42, Traylor 18x36, 24x36,  
Allis-Chalmers 30x18, Good Roads 10x30, Telsmith  
18x32, Pioneer 30x42, Universal 18x32.

**GYRATORY:** Al-Chal 322, 6' 7 1/4" x 8, 9, 9K, 10,  
20 and 30 Telsmith 8H, 28" Intermec, Kennedy  
Van Buren 1, 19, 25 1/2, 37 1/2, 38, Traylor 1' 8",  
4' Type TM, TY 3, T2 3, T2 3.

**ROLL:** Cedar Rapids 40x20, Pioneer 40x22, Pioneer  
38x18, Telsmith 24x16, Universal 40x24 double.  
**HAMMERMILL:** Jeffrey Type B3 24x20, Type B  
36x24, 36x42, Eagle 24x24, Steedman 24x30,  
Cedar Rapids 50-50, 30x33, Penn Model 8XN 100

**BALL MILL:** K. V. S. Type M 6'x8" Alzweep, Marcy  
No. 84 1/2, Hardinge conical 10'x40", 10'x30",  
6'x20", 8'x12", 5'x7", A-C 6'x16".

**TUBE MILL:** 5'x16", 5'x20", 5'x22", 6'x12".  
**ROCK MILL:** Jackson & Chalmers 4'x16' 10 ton rods,  
new Marcy 38x, 5x12, 6x12, Ruth 4'x11".

**AUTOCLAVES:** Jackson & Chalmers bolted head  
50'x6" "Quick Acting" head 50'x6".

**CONVEYORS:** Symons 2' and 3' coarse board.  
**KILNS:** 4'x42", 5'x30", 6'x50" 6", 6'x45", 6'x72",  
Vulcan 9x100, 10'6"x105", 8'x10", 6'x80".

**DRYERS:** Louisville 8'x20", 4'x20", others 4'x40",  
7'x20", 6'x20" complete with motor, NRV.

**COMPEN MILLS:** A-C 7'x24" with motor drive.  
**CRUSHING PLANTS**

Cedar Rapids AA 2225 primary port. Diesel.  
Cedar Rapids 3023 hammermill Diesel. Traylor mtd.  
Eagle washing plant, classifier sand screws, screen.  
Pioneer 160 Primary 2038 Cat D8800 Diesel.  
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Austin Western 101 Port. Diesel.  
Pioneer Duplex Prim. 936 AFB Second. 2040 rolls.  
Aus-West. 2540 Port. Primary

Pioneer Port. 11218 jaw, 40x28 rolls.  
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Universal 30x36 Jaw 30'x18" roll plant complete.  
**CONCRETE PLANTS AND EQUIPMENT**

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Blaw Knox HPC-400 III cement bin. Complete.  
Butler 600 bbl cement bin. All equipment, NRV.

Noble CA 245, complete plant, almost new.  
Johnson 135 yd. 4 comp. 150 bbls cement, 750 bbls  
silo U. S. Corps Engrs. automatic.

Johnson 200 ton automatic 3 comp. aggr. with Helt-  
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Johnson 150 yd. 5 comp. aggr. 870 bbl cement bin.  
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Cement bin 250 bbls overhead storage with 370 bbls  
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Rev 160, 190, 300 Pumperettes complete.

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Morris 16'x14" Portable Electric.

10" Portable Diesel powered, Complete.  
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8" portable Diesel complete with cutters, etc.  
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Trommel 6'x45' 75 HP. elec. motor.  
Kennedy Van Buren 3'x10' 3 deck.

Tyler Niagara 3 deck 7 1/2, H.P. A.C. motor.  
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Telsmith 5'x12' dbl. deck elec. motor.

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One 1941 White Tandem Drive with a 3  
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One 1946 Auto Car tandem Drive with a  
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**BINS:** 100 ton capacity, 3 compartment, 3 gates, for truck loading.

**TRUCK CRANE:** Lorain T20 complete with crane boom, shovel front and backhoe.

**JAW CRUSHERS:** 10 x 15, 10 x 20, 12 x 24, 15 x 36, 18 x 36, 24 x 36, 25 x 40, 30 x 42, 40 x 42, 42 x 48.

**CRUSHING EQUIPMENT:** Jaw Crusher 25 x 40, roller bearing, with 36" x 12" Feeder with motor and drive.

**PORTABLE CRUSHING PLANT:** Diamond model 66, diesel powered.

**GYRATORY & REDUCTION CRUSHERS:** All sizes.

**FEEDER:** Austin Western 42" x 12".

**SAND SCREW:** 24" x 25" with steel box.

**ROD MILL:** 4' x 8' wet grinding peripheral discharge with 50 H.P. motor and control. NEW condition.

**TRACKMOBILE:** Whiting type TM322, standard gauge.

**DRAGLINE:** P&H 2 1/2 yd., 90' boom.

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**CLAM SHELL BUCKET:** Williams 1 1/4 yd. capacity. Excellent condition.

**CONVEYORS:** 60" x 170' and 60" x 300' complete.

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Dodge Lever Type Jaw Crusher 9" x 15"  
Climax 10 x 20" Jaw Crusher, new jaws.  
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Jeffrey 35 Cu. Yd. Bin  
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6" Enclosed Bucket Elevator.  
8" Enclosed Bucket Elevator.  
75" x 10" Enclosed Elevator.  
9" x 30" Screw Conveyor.  
12" x 40" Screw Conveyor.  
42" & 48" Trough Idlers, antifriction.  
36" Trough Idlers, 5 roll type (69)  
New Idlers, 18" and 24".  
18" & 24" Plain Bearing Trough Idlers, 5 roll type.  
Misc. Size Large Conveyor Pulleys.  
Eriez Perm. Magnetic Pulley 20" x 20".  
Small Gasoline Water Pumps.  
700 KW Generator Set, Diesel.  
350 KW Generator Set, Diesel.  
84 KW Generator Set, Diesel.  
Wright 8 Ton Chain Hoist.  
50 H.P. Lambert double drum hoist.  
15 Ton Stiffleg Derricks, 110' Boom.

**WANTED**

Gearmotors 3 to 15 H.P.  
Jaw Crushers, all sizes  
Late Model Vibrating Screens.  
Good used 18" & 24" Trough Idlers, any amount.

**G. A. Unverzagt & Sons Inc.**  
136 Coit St. Irvington 11, N.J.

**DEPENDABLE USED MACHINES**

Pioneer port. gravel plant; 9 x 36 crusher, gn. tires, Diesel power.

42" Oro feeder	Universal 880 Jr. Port. Plant	2 yd. Dumperette
5 x 12 Mesabi screen	Telsmith 30" recip. feeder	B-G paver
24 x 48 magnetic pulley	Telsmith 4 x 12 screen with spray	16 x 16 roll crusher
24" x 40" conveyor	Cletrac with 1 1/2 yd. loader	NW 1 yd. crane
30" x 200" conveyor	B-G #358 hopper car unloader	P&H 255A crane

This equipment rebuilt in our modern plant by expert mechanics. Come see it.

**TRACTOR & EQUIPMENT CO.** Oak Lawn, Ill.  
10002 Southwest Highway

**SPECIALS**

1—New 6 1/2' x 160' Kiln  
1—28" Telsmith Intercone Crusher.  
1—10 1/2' Clyde hydrator.

**KILNS**

1—10 1/2' x 200'.

**DRYERS**

6' x 60'

**CRUSHERS**

1—24" x 36", 18" x 36", 15" x 36", 12" x 24" Jaw Crushers.  
2—42" x 16" Allis-Chalmers Crushing Rolls, rebuilt. 36" x 16 rebuilt Sturtevant rolls.  
2—24" x 14" Rogers Iron Works Crushing Rolls, Rebuilt.  
1—24" x 12" Farrell Bacon Crushing Rolls.  
1—6", 10", 16", 20" McCully Superior Gy-ratory Crushers.  
No. 8 up to No. 12 Gy-ratory Crushers.

**BALL, ROD & TUBE MILLS**

2—6 1/2' x 20', 6' x 22' & 6' x 22' & 7' x 24' Tube Mills.

**MISCELLANEOUS**

1—8' x 10' Rotary Filter.

We make new dryers and kilns.

Have you any machinery that you  
want to sell?

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50 Broad St., N. Y.

Tel. Wh. 4-4236

**FOUR CRANES & SHOVELS**

Marion "331" 3/4 yd. Shovel or Dragline.  
Insley "L" 3/4 yd. Crane or Dragline, 1952 Model.  
Unit "514" 1/2 yd. Trench Hoe, fair condition.  
Unit "514" 1/2 yd. Dragline, 30' Boom with Bucket.  
Link-Belt Shovel Attachment complete for LS-85 (3/4 yd.).

**FIVE TRANSIT MIXERS**

Jaeger 3 yd. (4 1/4 yd. Agitator) Hi-Dis-charge, on 1950 International LF170 Tan-dem.  
Jaeger 3 yd. (4 1/4 yd. agitator) Hi-Discharge, 1946 model, mounted on 6-wheeler.  
Smith 3 yd. (4 1/4 yd. agitator) Hi-Discharge, un-mounted.  
Rex 3 yd. (4 1/4 yd. agitator) Hi-Discharge, mounted F-8 Ford Tandem.  
Rex 5 1/2 yd. Demonstrator Adjusta-Wate Mixer, mounted RF192 International Tan-dem Axle Truck.

**SIX LOADERS**

Pettibone "175D" Demonstrator 1 1/2 yd. Diesel Tractor Shovel, 4-Wheel Drive, power shift transmission. Priced to sell.  
Caterpillar "D-6" Diesel Tractor w/Hi-Lift Cable Traxcavator, 1950 model in fine shape.  
Cletrac "DGH" Gas Crawler w/Drott Hi-Lift 1 1/2 yd. Loader. Buy for repairs or to fix up—at your own price.  
Allis-Chalmers "HD5" Front End Loader, 1952 Model.  
International "TD9" Drott Hydraulic Front End Loader—Excellent.  
Hais "75C" Used Crawler Bucket Loader.

**MISCELLANEOUS**

Parsons "21" Ladder-type Crawler-Mounted Trenching Machine—digs 9' deep.  
Pettibone-Wood "820A" New Windrow Pro-portioner. Reduced for quick sale.  
Pettibone-Wood "840A" New Windrow Spreader Box. Offered at discount.  
Pettibone-Wood "H620" Used Preparator.  
G-M Diesel Power. Will rent or sell.  
Bayport 21 yd. New Aggregate Bins.

**NOTE: All This Equipment Located in our Yard.**  
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120 S. Pierpont Phone: 4-6706  
ROCKFORD, ILL.

## LIQUIDATION

- 1—Patterson 7' x 18' Two-Compartment Compeb Mill, 400 HP motor.
- 4—Bartlett & Snow 8½' x 35', 7' x 30', 6' x 30' direct heat Rotary Dryers Complete with feeders, blowers, motors, 304 SS Clad 17' from feed end.
- 1—Raymond 16' dia. single whizzer Mechanical Air Separator with 50 HP motor.
- 1—Raymond 12' dia. double whizzer Mechanical Air Separator with 30 HP motor.
- 3—Tyler Hummer 3' x 15', Type 38 single deck Screens with Thermionic Units.
- 5—Bartlett & Snow totally enclosed Bucket Elevators 28' to 55' centers, 8" x 5" buckets, motor driven.
- 1—Link Belt totally enclosed Bucket Elevator 51' centers, 14" x 7" buckets, motor driven.
- 150' Screw Conveyor 14" and 18" dia. with steel troughs and covers.
- 1—Rectangular Two - Compartment Bin 22'8" long x 20'6" wide x 18' deep.

Your Inspection Invited  
Wirel Phone! Wirel

**BRILL EQUIPMENT COMPANY**  
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Tel.: CYPRESS 2-5703

**CEDARAPIDS** 2-Unit Portable Plant w/20x36 rb. Jaw, feeder, conveyor, GMC diesel on tandem rubber. Secondary w/4033 hammermill, 4x12 screen, 30" conveyor system, return wheel, GMC twin diesel, on tandem rubber. Late model, perfect. \$12,000 Rental Purchase.

**PIONEER** mill, 5309 Portable Plant w/54x24 Triple Roll, feed & discharge conveyors, mounted tandem rubber. Excellent. \$17,500

**UNIVERSAL** Secondary Portable Plant w/18x30 rb. Roll & 23 hammermill crushers, 4x12 screen, rotator, 30" conveyor system, Cal. Diesel electric & Huda diesel power, tandem rubber. Overhauled. \$16,500 yd. Rental Purchase.

**CEDARAPIDS** 18x24 rb. Jaw Portable Primary w/feeder, vibr. grizzly, power, truck conveyor on tandem rubber. Excellent. \$6600 Rental Purchase.

**CEDARAPIDS** Pitmaster Portable Plant, complete w/power & 2-delivery conveyors, on rubber. Like new, used 1000 hrs. \$22,000 Rental Purchase.

**CEDARAPIDS** 20x36 r.b. Jaw Crusher, good \$4850.

**CEDARAPIDS** 25x40 r.b. Jaw Crusher, new dies, shaft, bearings. \$8500 Yard.

**CEDARAPIDS** 18x24 rb. Jaw crusher, new dies, V-groove drive. \$2500 Yard.

**AUSTIN WESTERN** 9x40 rb. Jaw Crusher. \$1500 Yd.

**ROGERS** 10x36 pb. Jaw Crusher w/40" bucket elevator. \$1500 Yard.

**AUSTIN WESTERN** 12x20 rb. Jaw Crusher, excellent. \$1200 Yard.

**MCLANAHAN** 30x18 Single Roll Crusher. \$2850 Yard.

**PIONEER** 10x22 Triple Roll Crusher. \$7850.

**SIMPLICITY** 4x8 3-deck vibr. Screen, hvy. duty model D. Perfect. \$1850 Yard.

**ALLIS CHALMERS** 5x10 Single deck Loflead horizontal screen. 5 hp. motor. A1. \$1500.

**LINK BELT** 3x8 2-deck vibr. screen. \$600 Yard.

**PIONEER** 1x12 3-deck Vibr. Screen, good. \$1750 Yd.

**SIMPLICITY** 1x12 3-deck Vibr. Screen, A1. \$2650 Yd.

**PIONEER** 4x28 apron feeder w/motor. \$1750 Yard.

**BUCHYUS ERIE** 22B Shovel, electric, 1 cy. bucket, new 1955, perfect. Yard.

**P&M** 255A Shovel. #15501, a new 1952, w/Cal. diesel. \$7500 Rental Purchase.

**BUCHYUS ERIE** 37B Shovel front, like new. \$2600 Yd.

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Cedar Rapids 36" x 25" double screw, complete with 30" x 24" reciprocating type feeder, 30" x 30" channel frame conveyor and 60" x 30" conveyor and 90 M-20 centrifugal pump, complete with all motors drives, and electric controls. Practically new. Used one season for one special job. Priced for quick sale.

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Phone 7212, Genoa, Ohio

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- 25 Tons Rock Crusher (Pioneer) parts
- 4 Rolls—54 x 24 Corrugated
- D8 & D7 Rock Guards—Also Pads
- 200 New Army Truck Racks
- 1000 New Army Watertight Tool Boxes or Food Boxes
- 640 New One Gallon Neoprene Tanks
- Three Ton Clark Fork-Lift
- 1955 GMC Pick UP 1949 Divco Delivery Wagon
- D7 Caterpillar with Bulldozer
- LeTourneau Tournapull Dump Trailer 11½ yds.

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Modesto, Calif.

### KILNS—COOLERS—DRYERS

705-24 Link Belt Roto Louvre  
705-20 Link-Belt Roto Louvre, 88  
502-16 Link-Belt Roto Louvre  
8" x 125" x ¾", 7" x 60" x ½",  
5' x 20" x ¼" welded  
4' x 18" Portable Cooler

### PULVERIZERS—MILLS—CRUSHERS

8' x 24" Harding Steel Lined 150 hp  
8" x 18" Pacific Jaw Crusher  
54" x 26" Allis Chalmers crushing rolls (2)  
18" x 18" Jeffrey 1-roll spiked  
14" x 16" B. & S. 2-roll spiked  
Raymond #1 Pulverizer  
3620 Dixie Non Clog Hammermill  
20" x 12" Jeffrey Hammer Style A, NEW  
16" x 8" Jeffrey Hammer Style B, NEW

### BUCKET ELEVATORS

28' to 53'6" c/e 8x5 buckets (4)  
29' to 55'4" c/e 14x7 buckets (4)

### SCREENS

Rotex #21, 40" x 84"  
Tyler-Hummer 4' x 16' single deck  
Raymond 16' single whizzer.  
Universal Road 18" Cent. Separator

### MISCELLANEOUS

47" Screw Conveyor, 15" 2 HP motor  
12" Merrick Weightometers  
Rotolone Collector, Type W, Size 36

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60 East 42nd St., New York 17, N.Y.  
MURRAY HILL 7-5280  
(MACHINERY & EQUIPMENT MERCHANTS)

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- 1—Whiting Trackmobile, Model TM322
- 2—Locomotives, 8 & 12 ton, 36" gauge Plymouth gasoline
- 2—Hammermills 24" x 24" Eagle Crusher Co., excellent condition.
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For further information contact J. H. Clements,

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Dorr 26' dia bowl with rakes.  
Telsmith 36" x 25" sand drag.

**COLLECTORS** Ducon Wet and Ducon Dry.  
Both have 10,000 CFM capacity.

**PAN CONVEYORS** Rex 36" x 54',  
Link-Belt 30" x 33'.

**DRAG CONVEYOR** 80' centers with 15 x 5" cast flights on #730 chain.

**ELEVATOR** Open inclined 90' centers with 15 x 14 buckets.

**FEEDERS** 24" x 10'6" Jeffrey apron and 24" x 18" pan feeder.

**GRIZZLY ROLLS** Frame contains six 12" dia x 36" ribbed live rollers.

**HAMMERMILL** Pennsylvania 5-6.

**PUG MILL** Chambers 30" x 14'7".

**SCREENS** 4' x 6'6" Dble Deck Gyrex.

60" x 84" Model 421 Rotex.

**SEPARATOR** Dings Magnetic Cross-belt.

**ELECTRIC MOTORS** 26 from 3 HP to 75 HP. 440 Volt, 3 phase, 60 cycle.

**G. & W. H. Corson, Inc.**  
PLYMOUTH MEETING, PA.

Bargain In 8x125 Roto & 7x51 Cooler  
**DRYERS:** 2x20, 5x20, 5½x40, 7x55, 8x58, 10x101  
1200 HP 1050 KVA Diesel Elec. **POWER PLANT**  
**QUARRY** equip shovels, 428 jaw, Cones etc. Also  
AW&I, Diamond 65, Fair 21, 800, Pioneer 40V  
305W portable, CR Master Tandem  
**CRUSHERS:** 410, 913, 936, 1018, 1030, 1026, 1036,  
1036, 1118, 1224, 1524, 1526, 1836, 2036, 2436,  
2540, 3012, 4836, 4042, 4218 **JAW** 7½, Austin,  
215, 28½, Kennedy, Traylor 2'4", 16A, Yelamilli,  
16" 30" 30", 42" McCully GYR. 2, 3 and 4"  
**CONES**  
**CONVEYORS:** 24"x40", 18"x30", 42"x100", 30"x80"  
**FEEDERS:** 3½x8, 2½x12, 3x12 & 4½x18 Apron  
**WASHERS:** Eagle 18x14, 16x12, 24x18 & 7x30  
½, ¾, 1½, 2 & 6 yd **BAUERMAN'S**  
**SHOVELS & DRAG:** ¾ yd, Broadbent ¾ yd  
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2100, N&S, G. T & 8019, August 908 Link Belt  
1-200, Bucyrus 22B, 38B, 50B  
Repairs: Bonded Seal & Machine Co  
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### Save on Your INDUSTRIAL TRACK

### FOSTER QUALITY RELAYING RAILS

Handle more cars better—cost less to install and maintain. Foster stocks all Rail Sections 12" thru 175", Switch Material and Track Accessories.

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RAILS • TRACK EQUIPMENT • PIPE • PILING

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### JAW CRUSHERS

60"x48" to 6"x3"

New and used **RELIABLE**



"Farrel-Bacon"  
Jaw Crushers

**BACON-PIETSCH CO., INC.**

26 Park St., Montclair, N. J.  
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Available throughout the U.S.—Items you need may be available near you. Your inquiries would be appreciated.

Buildings	Drumlines	Loaders	Pavers
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Barges	Drills	Mixers	Rail
Buckets	Derricks	Motors	Scales
Belting	Engines	Mills	Screens
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Cars	Feeders	tools	Tanks
Compressors	Graders	Pulverizers	Tractors
Conveyors	Generators	Pipe	Trailers
Crushers	Holts	Pumps	Etc., Etc.
Driers	Kilns		

(I can sell your surplus equipment)

**ALEX T. McLEOD**  
MARIETTA, KANSAS

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Model 75 W Lorain Crane-Clamshell, Cat. Diesel Power, As Is F.O.B. Chattahoochee, Florida.

**MCCULLOUGH INDUSTRIES, INC.**  
P. O. Box 630, Birmingham, Ala.

### FOR SALE

NEW ALUMINUM GRAVITY SKATE WHEEL CONVEYORS 12" by 10' sections, Rapids-Standard. Special Low Price. Circular on request.

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Rt. #4, Box 126, Louisville 19, Ky.

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D-8 Cat. 2U Series ANGLEDOZER  
22 x 40 PIONEER ROLL CRUSHER  
ABOVE EQUIPMENT IN FAIR TO EXCELLENT CONDITION PRICED RIGHT

**B. V. Hedrick Gravel & Sand Co.**  
LILEVILLE, N. C.

Equipment Located in All Parts Of The Country  
Two—4' Symons Standard Cones, Course Bowls.  
42" Superior McCully Gyroscopic Crusher.  
42 x 48 R. B. Pioneer & Feeder. Used 14 Months.  
Two—3 x 14 Marcy Rod Mills.  
30 x 42 Pioneer primary, unused, \$85,000 value for \$28,000 25 x 40 Austin Western with feeder, grizzly & 100 hp 32 x 40 Austin Western jaw. 4 1/2' & 3' Symons, 26" Teismith cones, A-C 322-R Hydrocone.  
20" Superior McCully, 150 hp 30" Superior McCully.  
16-A & 10-A Teismiths. #37 1/2' & 38 1/2' Kennedy Van Saun. 3630 Distle hammermill. 5050 Cedar Rapids impactor. 3030 Impactor port. plant.  
Pioneer 54 x 24 double roll. Pioneer 54 x 24 triple roll portable plant. Rod mills 9 1/2' x 12, 6 1/2' x 14 1/2', 6 x 7 feeder with grizzly. 10 1/2' x 10 1/2' Traylor kiln. Jay continuous miner, low type. 50 ton/day hydrated lime plant. 125 TPD Rotation mill. Link Belt 2 1/2' yd. shovel & three 15 ton Euclid, also 600 cfm compressor and bin and conveyor equipment all located in Southeast.

New List of Surplus Equipment Now Available  
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All sections available together with all accessories. Also Spikes, Bolts, Cars & Locomotives.

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80' ton Porter Diesel Elec. Loco.  
35 ton Plymouth Diesel Locomotive.  
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Christian 2D Hoist & Swinger, 138 HP  
Buda Diesel Engine. 15,000# SLP.  
Lidgerwood 2D Hoist & Swinger, 90 HP  
Buda Diesel Engine.  
2 100 HP Lucey Portable Horiz. Fire-Box  
Boilers. 200 lbs. Oil Fired. ASME.  
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4 yd. P&H 1055 Dragline new 1950.

**Whisler Equipment Company**  
Affiliated With

**Mississippi Valley Equipment Company**  
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### COMPLETE CEMENT PLANT

3600 BBL. PER DAY

ALL EQUIPMENT ON HAND

ALL ENGINEERING DRAWINGS  
COMPLETED. CAN BE OPERATING  
9 MONTHS OR BETTER—AT YOUR  
SITE

Principles Only

Reply to

BOX P-16, ROCK PRODUCTS

79 W. MONROE ST., CHICAGO 3, ILL.

### QUARTZITE QUARRY FOR SALE

156 acres of an unlimited deposit of a high grade, highly refractory quartzite.  
11 acres of tracksite property, located in the South Central part of Wisconsin.  
Quarry fully developed and ready for operation. Here is a real opportunity for a capable party to install the necessary equipment for quarrying, crushing and screening for volume production. Market covers a large territory, low freight rates. Have market for good size tonnage for all year round shipments.

BOX P-6, ROCK PRODUCTS,  
79 W. Monroe St., Chicago 3, Ill.

### AVAILABLE IMMEDIATELY COMPLETE

### 4,000 KW DIESEL POWER PLANT

Consists of four Fairbanks-Morse diesels, each driving a 1,136 KW, 2,400 Volt, 3 Phase, 60 Cycle, AC Generator; with all auxiliary equipment, coolers, air filters, starting air compressors and tanks, fuel and oil day tanks, control equipment, switchgear, etc.

Equipment on hand and ready for installation. Power Plant building and auxiliaries designed, construction drawings available. Arrange for two additional generating units if desired.

PRINCIPALS ONLY REPLY TO:  
BOX P-17, ROCK PRODUCTS  
79 W. Monroe St., Chicago 3, Ill.

## EQUIPMENT WANTED

### WANTED

4 1/2' Standard Symons Cone Crusher, Course Bowl.

OR

Teismith 48S Course Bowl Gyroscopic Crusher in good operating condition, with or without power.

**Contractor Equipment Rentals Co., Ltd.**  
600 Panet Road, Winnipeg 1, Manitoba

### EQUIPMENT WANTED

2 batch lime hydrators  
1 200 KW diesel generator set

**BAKER STONE CO.**  
BLOOMSBURG, PA.

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WHERE TO BUY ADVERTISING IN CONCRETE PRODUCTS SECTION

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Quarries  
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Phone 1828

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Ph. Franklin 2-4186

Operation  
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A complete service for the  
lime, crushed stone and  
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"We look into the earth"  
PENNSYLVANIA  
DRILLING COMPANY  
Pittsburgh 20, Pa.

FOUNDATION TESTING, CHEMICAL ANALYSIS

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THOMASVILLE DRILLING & TESTING CO.  
THOMASVILLE, PENNA.

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## ENGINEERS!

### CAREERS IN SUPERVISORY POSITIONS

*In one of AMERICA'S FASTEST GROWING INDUSTRIES*

As a result of its current 50% expansion program, a large cement producer has challenging careers awaiting engineers with supervisory experience. If you seek a larger, more important challenge—and certain employee advantages over and above customary benefits such as good pay, pension plan, life and hospital insurance—apply for one of the following openings available at our expanded facilities in Pennsylvania, Ohio and Illinois.

**MAINTENANCE ENGINEERS**—Exceptional career growth opportunity for men approximately 30 to 40 with engineering degree or practical operating experience.

**ENGINEERS**—Excellent opportunity for young men to get in on ground floor in cement mill constructions and operation. Practical experience desirable.

**QUALITY TECHNICIANS**—Outstanding opportunities for men up to 35 interested in laboratory work followed by advancement to either Plant Control Chemist or Technical Service Engineer.

Write today giving full details of training and experience to:  
BOX P-15, ROCK PRODUCTS, 79 W. Monroe St., Chicago, Ill.

*All replies held in strictest confidence.*

## Try A Small Ad

For Quick Results

## WANTED

Sales Manager, by Mid Eastern Company producing both Chemical and Commercial Grades of Limestone, products, etc. Must be able to travel. Age 30-40. Salary plus bonus expenses.

BOX P-14, ROCK PRODUCTS  
79 W. Monroe St., Chicago 3, Ill.

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Wenzel Machinery Rental & Sales Co.	299
Whisler Equipment Co. Affiliate of	
Mississippi Valley Equipment Co.	300

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All sizes, new and rebuilt. Starters, accessories, pulleys and repair parts. Gear motors, Falk Shaft mounted Speed Reducers, couplings and V-belt drives.

Expert Repair Service

**NUSSBAUM ELECTRIC COMPANY**  
220 E. Douglas Ave., Fort Wayne, Ind.

## CHIEF ENGINEER

Experienced Chief Engineer required by Canadian Cement Company. Thorough knowledge of design and operation of cement plants necessary. Age 30 to 50 years. Attractive position in a progressive company.

Send application to:

BOX P-19

ROCK PRODUCTS

79 W. Monroe St., Chicago 3, Ill.

## CHIEF ENGINEER

Leading Company in Materials Handling Field has a challenging opening for a top-flight Aggregate Plant Designer. Must be familiar with plant layout, equipment selection and steel design. Job located in New York area.

- Salary open
- Exceptional Employee Benefit Plan
- A future with a good present

Send resume including salary requirement to:

BOX 0-92, ROCK PRODUCTS  
79 W. Monroe St., Chicago 3, Ill.

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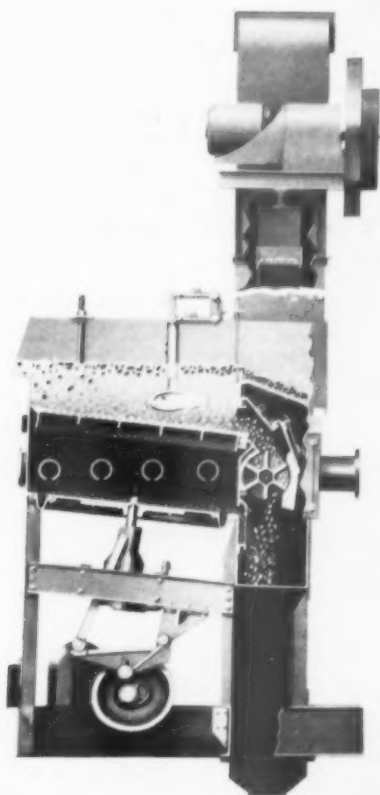
ROCK PRODUCTS, April, 1957

**Jigging** stratifies materials according to specific gravity, separating solids in upward and downward pulsations of water. The heavier materials settle to the screen plate and are drawn off. The lighter materials overflow.

**Jigging** is a universal separating process for materials ranging from the specific gravity of gold at 19 to coal at 1.3. Proportions of high gravity materials may vary from 90% to 10% or less. It is applicable to any separating problem where there are even small differences in specific gravity.



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Cross Section of Jeffrey Heavy-Duty Sand-and-Gravel Jig.

- You can increase your production and profits with a Jeffrey sand-and-gravel jig. Materials as quarried are fed to the jig. Coal, shale, clay, roots and sticks are removed, leaving sand and gravel of marketable grade. Capacities up to 75 tons per hour.

Jeffrey jigs have been used successfully for many years. Jeffrey engineers are fully qualified to advise you on sand-and-gravel problems.

Bulletin 892 describes Jeffrey sand-and-gravel jigs and gives data useful to men who are laying out a plant. For a copy, write to The Jeffrey Manufacturing Company, Columbus 16, Ohio.



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RP-4-57



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Half of its job is to handle the stripping to keep the sand and gravel bank uncovered.

Then it handles all of the loading for a plant that is working two shifts to keep pace with expanded operations.

The Marion 111-M is equipped with a 5-yard bucket on a 90-foot boom, making it one of the biggest machines in this type of work in the Texas area.

The 111-M is a diesel machine, capable of traveling and working almost anywhere. It combines all of the advantages of a diesel machine with the smooth, fast swing action of Ward-Leonard electric control. The diesel power unit drives a generator for the electric swing motors; there are no swing clutches to overheat and no complicated maintenance problem.

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*Whatever your job requirement, there is a Marion machine of the right size and type for greatest efficiency.*

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MARION 43-M	1	1-1/4	27T @ 10'	27T @ 10'	35T @ 15'
MARION 362	1 1/2	1 1/2-2	43T @ 12'	30T @ 15'	
MARION 87-M	Special Crane		150T @ 12'	75T @ 15'	
MARION 93-M	2 1/2	—	80T @ 12'	50T @ 15'	
MARION 101-M	3	—	84T @ 12'	57T @ 15'	
MARION 111-M	4	—	110T @ 15'	105T @ 15'	

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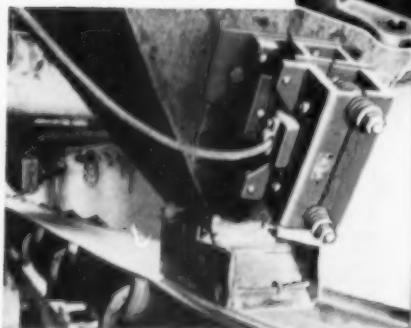
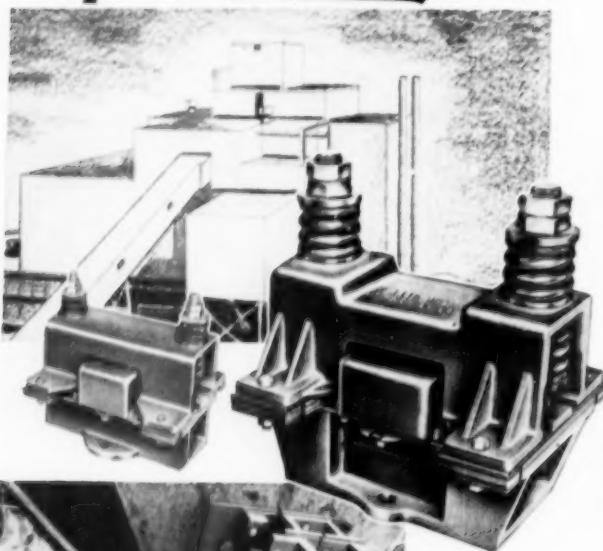
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keep limestone, crushed stone  
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bins, hoppers and chutes



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ROCK PRODUCTS, April, 1957

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## "We can't afford anything but CAT\*-built machines"

Ask Oscar J. Mortensen, owner of a gravel pit near Cascade, Montana, why he has Caterpillar-built equipment and you'll get this plain answer:

"We've used Caterpillar-built equipment since 1940. We've had very little trouble on repairs and costs are lower than on any other equipment we could use. If they weren't, we wouldn't own it. We can't *afford* anything but Cat-built machines."

How about service? "We get service and parts in a hurry," Mr. Mortensen says, "and the parts aren't out of line on price either."

A Caterpillar D9 Tractor with No. 9S Bulldozer is shown above at the Mortensen pit. Here it is *'dozing* raw gravel to the conveyor of a crushing plant that produces 1,000 cu. yd. of  $\frac{1}{2}$  to 2 inch track ballast per 8-hour day.

Pit owners everywhere are enthusiastic about the giant D9 Tractor. In repeated tests where accurate records have been kept, one D9 has outworked *two* bull-

dozers of the next size. Blade loads average 12 cu. yd. and are handled at higher speeds.

The D9 is heavy (35 tons with the No. 9S Blade) and powerful (320 HP at the flywheel)—yet one of the easiest of all tractors to operate because of its power-boosted controls and excellent visibility. Maintenance is low, too. The D9 is available with either torque converter or direct drive with oil clutch.

Everything about the D9 adds up to one thing: efficient production. Get all the facts from your Caterpillar Dealer; then try out the D9 in your pit. After you buy, depend on him for prompt service, parts you can trust.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

# CATERPILLAR\*

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WILL DEMONSTRATE**

## Kaiser Unitized Cement Kiln Liner\*

### UNMATCHED FOR SPEED AND EASE OF INSTALLATION IN CEMENT KILNS

As a cement producer, you know that kiln down-time can cost you up to \$200 an hour. But now producers using Kaiser T3 Unitized Kiln Liners have proved you can reduce liner installation time 30% to 50% . . . time you can re-claim for profitable production!

The unique Kaiser Chemicals development that makes this possible is the bonding of accessories to Kaiser Periclase-Chrome Brick. And in addition to increasing production, you get these extra benefits:

#### ASSURES CORRECT INSTALLATION

When installing Kaiser T3 Unitized Kiln Liners, shims are automatically aligned between all bricks. Part of the shim overlaps the hot face, permitting easy visual inspection.

#### TAKES THE GUESSWORK OUT OF EXPANSION ALLOWANCES

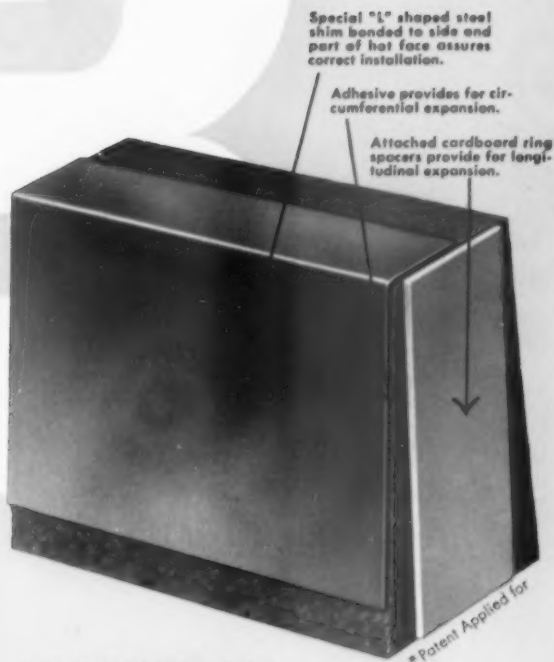
The thickness of the adhesive between shim and brick provides correct allowance for circumferential expansion. Bonded cardboard spacers give correct provision for longitudinal expansion.

#### COATS FASTER

When the kiln is fired up, the overlapping part of the shim melts, oxidizes, and combines with the feed to speed formation of hot zone coating.

#### REDUCES INVENTORY PROBLEMS

Because the shims and cardboard spacers are bonded to the brick at the factory, you need no separate orders or stock records for them.



#### AVAILABLE IN TWO STYLES

Kaiser Unitized Kiln Liners are available in all sizes of the standard 9"x6"x3 1/2" Series Arch Brick and Wedge Brick:

In Style T3 (standard) the shim overlaps approximately half of the hot face and extends to within 1/8" of the cold face. (The gap functions as a heat buffer between shell and shim.)

In Style T2, the shim overlaps approximately half of the hot face and extends up to the cold face. Shims are standard 16-gauge plate. Both styles are available with or without cardboard spacers (standard on T3); and with 14-gauge shims instead of 16-gauge.

Let us show you how this new Kaiser Chemicals development can help you reduce kiln down-time and give you longer liner life. Contact your Kaiser Chemicals sales engineer now.

Call or write Kaiser Chemicals Division, Dept. C7542, Kaiser Aluminum & Chemical Sales, Inc., at any of the addresses listed below:

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